Use Attainability Analysis

for

WBID 0447 East Fork Big Creek

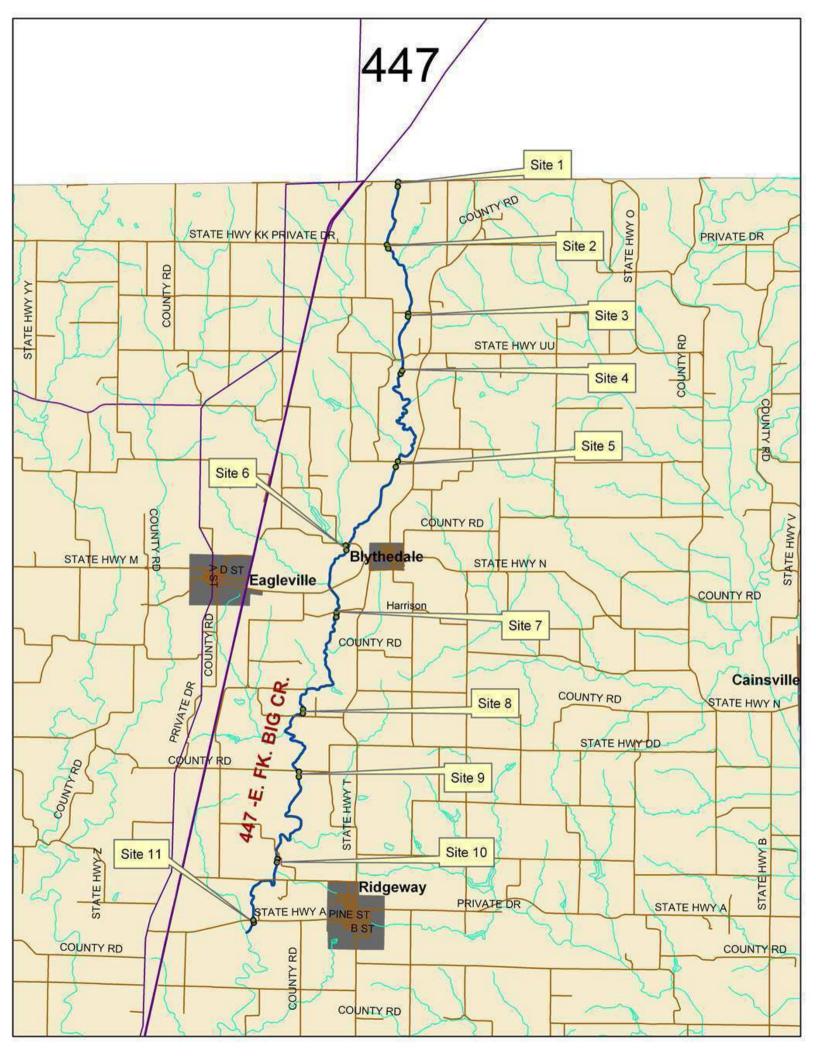
Submitted by SES Inc.

to Missouri Department of Natural Resources Water Protection Program

Date received: November 14, 2007

Data Sheet A - Water Body Identification

| Water Body Information (For water body I | being surveyed |) | |
|--|-----------------|-------------|--------------------------|
| Vater Body Name (from USGS 7.5' quad): | E. Fk. Big | Cr. | |
| Missouri Water Body Identification (WBID) Number: | 447 | | |
| 8 digit HUC code: 10280101 | County: | Harrison | |
| Upstream Legal Description (from Table H): | T67N | R27W | Sec 26 |
| Downstream Legal Description (from Table H): | T64N | R27W | Sec 5 |
| Number of sites evaluated: 11 | | | |
| List all site numbers, listed consequently upstream to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 | o downstream: | | |
| Site Locations Map(s): Attach a map of the entire s Mark any other items that may be of interest. | segment with a | ssessment | sites clearly labeled. |
| II. Facility Information (list all permitted discharges Facility Name(s) and Permit Number(s): | to the water bo | ody segmer | nt) |
| Blythedale WWTF | | | |
| MO0123081 | | | |
| | | | |
| | | | |
| III. UAA Surveyor (please print legibly) Name of Surveyor: Gilisa Gould | Telephon | e Number: | 913.307.0054 |
| Organization/Employer: SES, Inc. | | | |
| | | | |
| Please verify that you have completed all section complete. | ns, checked al | l applicabl | e boxes, and that the fo |
| Signed: gilisa gould | Date | : 10.04.07 | |



| WBID# | 447 |
|--------|-----|
| Site # | 1 |

| Date & Time: | 9.19.07 15:15 | Site Location Description (e.g. road crossing): | | | | | | | |
|---------------------------------|---------------|---|----------------|--------------------------|--------------------------------|----------------|---------------|--------|--|
| Personnel: D. Dodson & G. Gould | | | | 100 Rd. | | | | | |
| Current Weat | her Cond | ditions: clear | | Facility Nar | Facility Name: Blythedale WWTF | | | | |
| Weather cond | litions fo | r the past 10 days: | no precip | Permit Num | nber: | MO 0123081 | | | |
| Drought cond | itions?: I | No drought ☑ ; Pha | se I □ ; Phase | · II □ ; Phas | e <mark>III □ ; P</mark> I | hase IV □ ; Ur | nknown 🗆 | | |
| | | | | | | | | | |
| Site Location | n: | | | | | | | | |
| | | (Universal Transver | se Mercator Pr | rojection, In | Meters | | | | |
| Site 01 | Easting | ı (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | curacy: | Meters | |
| | | 0421687 | | 4492012 | | | | 6.1 | |
| Site 11 | Easting | (UTM X): | Northing (UTN | <u>—</u> И Y): | | Horizontal Ac | curacy: | Meters | |
| | | 0421675 | | 4491880 | | | | 6.7 | |
| | | 0421070 | _! | 4-01000 | | | | 0.1 | |
| Photos: | Г | | - | | | 1 | T | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo ID#: Photo Purpose | | Photo ID#: | Photo Pu | rpose | |
| 53 | | downstream | 54 | upstream | | | | | |
| | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo Purpose | | Photo ID# | Photo Pu | rpose | |
| | | | | | | | | | |
| | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Pu | rpose | |
| | | | | <u></u> | | | | | |
| | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | |
| ☐ Swimming | l | ☐ Skin diving | □ SCUBA d | iving | ☐ Tubin | g | ☐ Water Skiin | g | |
| ☐ Wind surfi | ng | ☐ Kayaking | □ Boating | | □ Wadir | ng | □ Rafting | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | ✓ None of the above | | | ☐ Other: | | |
| Describe: | | | <u>.</u> | | | | Į. | | |
| | | | | | | | | | |
| | | | | | | | | | |

| WBID # 447 Site # 1 | | | | | | | | | |
|---|-----------------------------|---|---|--|--|--|--|--|--|
| | Field Data Sheets | for Recreational Use Stream | <u>Surveys</u> | | | | | | |
| Data Sheet B- Site Characterization (Continued) | | | | | | | | | |
| Surrounding Conditi | ons: | | | | | | | | |
| ourrounding conditi | | | | | | | | | |
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservation lands | ☐ Urban areas | | | | | | |
| | ☐ playgrounds ☐ State parks | ☐ MDC conservation lands☐ National Forests | ☐ Urban areas☐ Nature trails | | | | | | |
| ☐ City/County parks | | | | | | | | | |

Evidence of Human Use:

| ☐ Roads | ☐ Foot path/prints | ☐ Dock/platform | ☐ Camping Sites | □ Rope swings |
|-----------------|--------------------|-------------------|------------------|----------------------|
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Discharge | ☐ Fishing Tackle | ☐ Livestock watering |
| comments/other: | | | | |
| | | | | |
| none | | | | |
| | | | | |
| | | | | |

☐ Rural Residential

☐ Stairs/walkways

Other:

Substrate:

| % Cobble | % Gravel | % Sand | % Silt | % Mud/Clay | % Bedrock |
|----------|----------|--------|--------|------------|-----------|
| | 20 | 30 | 20 | 30 | |

Aquatic Vegatation:

banks vegetated with common grasses and forbes, esp. trees

Water Characteristics:

| Odor: | □ Sewage | ☐ Musky | ☐ Chemical | $\overline{\checkmark}$ | None | ☐ Other: |
|------------------|----------|----------|------------------|-------------------------|-------|----------|
| Color: | □ Clear | □Green | □ Gray | $\overline{\checkmark}$ | Milky | ☐ Other: |
| Bottom Deposit: | ☐ Sludge | ☐ Solids | ☐ Fine sediments | | None | ☐ Other: |
| Surface Deposit: | □ Oil | ☐ Scum | □ Foam | $\overline{\checkmark}$ | None | ☐ Other: |

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses |
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| | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|----------------------------------|-----------------------------------|------------------|------------------|---------------------|---------------|
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| lease verify that yo omplete. | ou have completed all s | sections, checke | d all applicable | boxes, and that the | form is |

Position: field team leader

| | | | | | | | | | | | | | | | | | | Disso | lved Ox | ygen | | |
|----------------------|----------|------------|------------|-----------|-----------|-----------|-----------|------------|----------|-----------|----------|-----------|----------------|-----------|--------------|-----------|-----------|------------|----------|-----------|----------|----------|
| | Waterbo | ody ID: | 447 | | • | Site #: | 1 | | | | | | | | | Date: | 9.19.07 | 7 | | Time: | 15:15 | |
| | Estimate | ed Chann | nel Incisi | on: | 0.5 | (m) (hei | ight betw | een low b | ank wid | th and wa | ater) | | | | | | | Oxygen: | | • | | |
| | GPS Lo | cation - I | Easting (1 | UTM X) | . Northin | g (UTM | Y). Hor | izontal Ac | curacy l | Estimate | (EPE / P | DOP/F0 | OM) | | | Di | .55017 CG | Oxygen. | | 1.5 | (IIIg/L) | |
| | | UTM X | • | 0421687 | | - | | | - | | _ | +/- | 6.1 | (meters) | | Di | ssolved | Oxygen: | | | (% sat) | |
| | 11 | UTM X | : | 0421675 | 5 | 1 | UTM Y: | | 449188 | 0 | - | +/- | 6.7 | (meters) | | | | | | | | |
| | Average | Stroom | Width | | 4.5 | | | (meters) | т | ength of | Survey 9 | Sagmant | | 150 | (meters) | | Speci | fic Cond: | | | (µS/cm) | |
| | | | ngth of F | | 7.3 | | | (inctcis) | • | 20x avera | - | - | | 130 | (IIICtCIS) | Wa | iter Ten | nperature: | | 21.3 | (°C) | |
| | ` | | C | | | | | | ` | | | Ź | | | | | | | | | ` ' | |
| | Fiel | d Staff: | Drew | Dodson | | and | Gilisa G | ould | | | | | | _ | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 | 1 | 0 | 2 | 0 | 2 | | 04 | (|)5 | | 16 | | 07 | 08 | , | | 09 | 1 | | 11 | 1 |
| | Distance | 1 | Distance | | Distance | 3 | Distance | 7- | Distance | | Distance | | Distance | | | | Distance | - | Distance | , | Distance | 1 |
| Station | (m) | Depth (m) | | Depth (m) | (m) | Depth (m) | | Depth (m) | (m) | Depth (m) | | Depth (m) | (m) | Depth (m) | Distance (m) | Depth (m) | (m) | Depth (m) | (m) | Depth (m) | (m) | Depth (m |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.6 | 0.05 | 0.7 | 0.05 | 0.2 | 0.05 | 0.3 | 0.05 | 0.5 | 0.05 | 0.6 | 0.01 | 0.6 | 0.05 | 0.6 | 0.05 | 0.27 | 0.01 | 0.3 | 0.05 | 0.5 | 0.05 |
| 2 | 1.1 | 0.15 | 1.5 | 0.15 | 0.4 | 0.10 | 0.5 | 0.25 | 0.9 | 0.05 | 1.3 | 0.10 | 1.1 | 0.20 | 1.1 | 0.20 | 0.54 | 0.10 | 0.5 | 0.10 | 0.9 | 0.15 |
| 3 | 1.7 | 0.25 | 2.2 | 0.10 | 0.5 | 0.10 | 0.8 | 0.30 | 1.4 | 0.15 | 1.9 | 0.10 | 1.7 | 0.20 | 1.7 | 0.25 | 0.81 | 0.15 | 0.8 | 0.15 | 1.4 | 0.20 |
| 4 | 2.2 | 0.20 | | | 0.7 | 0.15 | | 0.30 | | | | | | | 2.2 | 0.25 | | 0.20 | 1.1 | | | 0.15 |
| 4 | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 2.8 | 0.20 | 3.7 | 0.01 | 0.9 | 0.10 | 1.4 | 0.25 | 2.3 | 0.15 | 3.2 | 0.10 | 2.8 | 0.20 | 2.8 | 0.25 | 1.35 | 0.15 | 1.4 | 0.20 | 2.3 | 0.20 |
| 6 | 3.3 | 0.20 | 4.4 | 0.00 | 1.1 | 0.05 | 1.6 | 0.15 | 2.8 | 0.10 | 3.8 | 0.15 | 3.3 | 0.10 | 3.3 | 0.10 | 1.62 | 0.20 | 1.6 | 0.20 | 2.8 | 0.15 |
| 7 | 3.9 | 0.20 | 5.1 | 0.05 | 1.3 | 0.05 | 1.9 | 0.10 | 3.2 | 0.05 | 4.5 | 0.10 | 3.9 | 0.15 | 3.9 | 0.00 | 1.89 | 0.15 | 1.9 | 0.15 | 3.2 | 0.15 |
| 8 | 4.4 | 0.15 | 5.8 | 0.10 | 1.4 | 0.05 | 2.2 | 0.05 | 3.7 | 0.05 | 5.1 | 0.10 | 4.4 | 0.15 | 4.4 | 0.05 | 2.16 | 0.10 | 2.2 | 0.10 | 3.7 | 0.15 |
| 9 | 5.0 | 0.05 | 6.6 | 0.05 | 1.6 | 0.01 | 2.4 | 0.01 | 4.1 | 0.05 | 5.8 | 0.05 | 5.0 | 0.10 | 5.0 | 0.05 | 2.43 | 0.05 | 2.4 | 0.05 | 4.1 | 0.05 |
| Right Bank | 5.5 | 0.00 | 7.3 | 0.00 | 1.8 | 0.00 | 2.7 | 0.00 | 4.6 | 0.00 | 6.4 | 0.00 | 5.5 | 0.00 | 5.5 | 0.00 | 2.7 | 0.00 | 2.7 | 0.00 | 4.6 | 0.00 |
| Feature Type | | | | | | | | | | | | | | | | | | | | | | |
| riffle, run, or pool | rı | ın | ru | ın | rif | fle | r | un | rit | ffle | rif | fle | p _' | ool | poo | ol | r | un | ru | ın | ru | n |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This with is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing weted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: gilisa gould Date: 10.04.07 | |
|-------------------------------------|--|
|-------------------------------------|--|

| WBID# | 447 |
|--------|-----|
| Site # | 2 |

| Date & Time: | | 9.19.07 15:55 | | Site Location | on Descrip | tion (e.g. road | crossing): | |
|---------------|-----------|-----------------------|----------------|---------------|-------------|-----------------|----------------|----------|
| Personnel: | D. Dods | son & G. Gould | | | 110 Road | | | |
| Current Weath | ner Cond | ditions: clear | | Facility Nar | ne: | Blythedale W | WTF | |
| Weather cond | itions fo | r the past 10 days: ı | no precip | Permit Nun | nber: | MO 0123081 | | |
| Drought condi | tions?: N | No drought ☑ ; Pha | se I □ ; Phase | ı II □ ; Phas | e III □ ; P | hase IV □ ; Ur | nknown 🗆 | |
| | | | | | | | | |
| Site Location | | | | | | | | |
| | | (Universal Transver | | • | Meters | | | |
| Site 01 | Easting | (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | curacy: | Meters |
| | | 0421356 | | 4490150 | | | | 5.2 |
| Site 11 | Easting | (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | curacy: | Meters |
| | | 0421392 | | 4490044 | | | | 5.8 |
| Photos: | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purp | ose |
| 55 | | upstream | 56 | downstrear | n | | | |
| | | <u>.</u> | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | ourpose | Photo ID# | Photo Purp | ose |
| | | | | | | | | |
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| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purp | ose |
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| Uses Observe | ed: | | | | 8 | | , | |
| ☐ Swimming | | ☐ Skin diving | ☐ SCUBA d | iving | ☐ Tubin | g | ☐ Water Skiing | |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | □ Wadii | ng | ☐ Rafting | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ☑ None | of the above | ☐ Other: | |
| Describe: | | | | | | | | <u> </u> |
| | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 2 |

| | Data Sheet B- | Site Characterization | n (Conti | nued) | | |
|----------------------------|------------------------------------|---------------------------------|----------|---------------------------------|------------|------------------------|
| Surrounding Conditi | ons: | | | | | |
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservati | on lands | ☐ Urban areas | ☑ Rural | Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | | ☐ Nature trails | | /walkways |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sig | ın | ☑ Steep Slopes | ☐ Other | • |
| Comments: | | | | , | <u> </u> | |
| none | | | | | | |
| | | | | | | |
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| F. 44 £11 | U | | | | | |
| Evidence of Human | | □ De els/relette me | | □ Comercine Cites | I 🗆 Dana | i |
| ☐ Roads ☐ RV/ATV Tracks | ☐ Foot path/prints ☐ Fire pit/ring | ☐ Dock/platform☐ NPDES Dischard | | ☐ Camping Sites☐ Fishing Tackle | | swings ock watering |
| comments/other: | ☐ Fire pivring | I INPUES DISCHARG | е | ☐ FISHING TACKIE | : Livesi | ock watering |
| none | | | | | | |
| none | | | | | | |
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| | | | | | | |
| Substrate: | | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mud | /Clay | % Bedrock |
| | 20 | 70 | 10 | | | |
| | | | | | | |
| Aquatic Vegatation: | | | | | | 1 |
| l and a self-contact of | | 1 (| | | | |
| banks well vegetated | • | and trees: | | | | |
| grasses, flowers, willo | w, mapie | | | | | |
| | | | | | | |
| Water Characteristic | s: | | | | | |
| Odor: | ☐ Sewage | ☐ Musky | ☐ Chem | nical 🔽 | None | ☐ Other: |
| Color: | ☐ Clear | □Green | ☐ Gray | | Milky | ☑ Other: |
| | | | | <u> </u> | , | silty |
| Bottom Deposit: | | П 0-1:-I- | | a adires a rata | None | ☐ Other: |
| Dottom Doposit. | ☐ Sludge ☐ Oil | ☐ Solids ☐ Scum | ☐ Fine s | | None | ☐ Other: |

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses |
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| | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
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| omments: (Please red | cord any additional comments | here.) | | | |
| rrow and steep cha | nnel, water flowing | | | | |
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| lease verify that yo omplete. | u have completed all s | ections, checke | d all applicable | boxes, and that the | form is |
| omplete. | u have completed all s gilisa gould | | | | form is |
| omplete. urveyor's Signature: | | | _Date of Survey: | | form is |

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|-----------------------|-----------------|------------------------------|--|------------------------------|-----------------|-----------|------------------------------|-----------|---------------------------------|-----------|-----------------|------------------------|-----------------|-----------|--------------|-----------|-----------------|------------|-----------------|-----------|-----------------|----------|
| | Waterbo | ody ID: | 447 | | | Site #: | 2 | | | | | | | | | Date: | 9.19.07 | , | i | Time: | 15:55 | |
| | | | | | | | | een low b | | | , | | | | | Di | issolved | Oxygen: | | 9 | (mg/L) | |
| | 01 | cation - I UTM X UTM X | <u>: </u> | UTM X) 0421356 0421392 | 5 | . 1 | Y), Hori UTM Y: UTM Y: | | ecuracy E 4490150 4490044 |) | ` | DOP / FO +/- +/- | 5.2 5.8 | (meters) | | D | issolved | Oxygen: | | | (% sat) | |
| | | e Stream | | | | • | | (meters) | | ength of | | | | (meters) | (meters) | | Speci | fic Cond: | | | (µS/cm) | |
| | | ermne Le | | | | 2.0 | | (meters) | | 0x avera | - | _ | | 130 | (meters) | Wa | iter Ten | nperature: | | 22.7 | (°C) | |
| | Fiel | ld Staff: | Drew D | odson | and | Gilisa G | ould | | | | | | | | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 |)1 | 0 | 2 | 0 |)3 | (| 04 | 0 | 5 | 0 | 6 | (| 07 | 08 | 3 | | 09 | 1 | 0 | 1: | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.3 | 0.05 | 0.3 | 0.05 | 0.4 | 0.10 | 0.2 | 0.01 | 0.3 | 0.05 | 0.2 | 0.05 | 0.4 | 0.05 | 0.4 | 0.05 | 0.27 | 0.10 | 0.3 | 0.05 | 0.3 | 0.10 |
| 2 | 0.5 | 0.01 | 0.5 | 0.15 | 0.7 | 0.30 | 0.4 | 0.10 | 0.5 | 0.10 | 0.4 | 0.20 | 0.7 | 0.20 | 0.7 | 0.15 | 0.54 | 0.20 | 0.5 | 0.20 | 0.5 | 0.10 |
| 3 | 0.8 | 0.01 | 0.8 | 0.20 | 1.1 | 0.30 | 0.5 | 0.15 | 0.8 | 0.20 | 0.5 | 0.20 | 1.1 | 0.20 | 1.1 | 0.20 | 0.81 | 0.25 | 0.8 | 0.20 | 0.8 | 0.20 |
| 4 | 1.1 | 0.10 | 1.1 | 0.20 | 1.5 | 0.25 | 0.7 | 0.15 | 1.1 | 0.20 | 0.7 | 0.20 | 1.5 | 0.25 | 1.5 | 0.20 | 1.08 | 0.25 | 1.1 | 0.20 | 1.1 | 0.30 |
| 5 | 1.4 | 0.20 | 1.4 | 0.25 | 1.9 | 0.30 | 0.9 | 0.10 | 1.4 | 0.25 | 0.9 | 0.20 | 1.9 | 0.25 | 1.9 | 0.30 | 1.35 | 0.30 | 1.4 | 0.30 | 1.4 | 0.40 |
| 6 | 1.6 | 0.10 | 1.6 | 0.10 | 2.2 | 0.30 | 1.1 | 0.05 | 1.6 | 0.20 | 1.1 | 0.20 | 2.2 | 0.20 | 2.2 | 0.25 | 1.62 | 0.30 | 1.6 | 0.30 | 1.6 | 0.35 |
| 7 | 1.9 | 0.10 | 1.9 | 0.10 | 2.6 | 0.30 | 1.3 | 0.10 | 1.9 | 0.15 | 1.3 | 0.10 | 2.6 | 0.15 | 2.6 | 0.20 | 1.89 | 0.30 | 1.9 | 0.25 | 1.9 | 0.25 |
| 8 | 2.2 | 0.05 | 2.2 | 0.10 | 3.0 | 0.20 | 1.4 | 0.05 | 2.2 | 0.20 | 1.4 | 0.05 | 3.0 | 0.15 | 3.0 | 0.20 | 2.16 | 0.20 | 2.2 | 0.15 | 2.2 | 0.30 |
| 9 | 2.4 | 0.01 | 2.4 | 0.05 | 3.3 | 0.05 | 1.6 | 0.05 | 2.4 | 0.05 | 1.6 | 0.05 | 3.3 | 0.05 | 3.3 | 0.10 | 2.43 | 0.10 | 2.4 | 0.10 | 2.4 | 0.05 |
| Right Bank | 2.7 | 0.00 | 2.7 | 0.00 | 3.7 | 0.00 | 1.8 | 0.00 | 2.7 | 0.00 | 1.8 | 0.00 | 3.7 | 0.00 | 3.7 | 0.10 | 2.7 | 0.00 | 2.7 | 0.00 | 2.7 | 0.00 |
| Feature Type | ., | ca | | | | | | ca | | | | | | | | | | | | | | |
| (riffle, run, or pool | rıf | ffle | rı | ın | pc | ool | rı | ffle | rı | ın | rı | ın | r | un | ru | n | r | un | ru | ın | ru | n |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This with is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing weted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

3.33 MAXIMUM 1.35 MEDIAN

| Signed: gilisa gould Date: 10.04.07 | Name 4. Siling a sold Detail 10 04 07 | |
|-------------------------------------|---------------------------------------|--|
|-------------------------------------|---------------------------------------|--|

| WBID# | 447 |
|--------|-----|
| Site # | 3 |

| Date & Time: | | 9.19.07 16:50 | | Site Location | on Descrip | tion (e.g. road | crossing): |
|---------------|------------|-----------------------|--|---------------|-------------|------------------------|----------------|
| Personnel: | D. Dods | son & G. Gould | | | Road 122 | | |
| Current Weath | ner Cond | ditions: clear | | Facility Nan | me: | Blythedale W | WTF |
| Weather cond | litions fo | r the past 10 days: r | no precip. | Permit Num | nber: | MO 0123081 | |
| Drought condi | itions?: N | No drought ☑ ; Pha | se I □ ; Phase | Ⅱ 🛛 ; Phas | e III □ ; P | ha <u>se IV □</u> ; Ur | nknown 🗆 |
| | | | | | | | |
| Site Location | | | | | | | |
| Location Coor | dinates | (Universal Transver | se Mercator Pr | ojection, In | Meters | | |
| Site 01 | Easting | (UTM X): | Northing (UTN | Л Y): | | Horizontal Ac | curacy: Meters |
| | | 0421986 | | 448111 | | | 12.2 |
| Site 11 | Easting | ı (UTM X): | Northing (UTN | Л Y): | | Horizontal Ac | curacy: 14.3 |
| | | 0421975 | | 4488024 | | | |
| DI -4 | | | | | | | |
| Photos: | 1 | | | <u> </u> | | | T |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose |
| 57 | | upstream | 58 | downstrean | n | | |
| Dhata ID# | | Objets Drives | Dhata ID# | Dhata [| 2 | Dhata ID# | Dhata Duwasa |
| Photo ID# | F | Photo Purpose | Photo ID# | Pnoto F | Purpose | Photo ID# | Photo Purpose |
| | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose |
| | | | | | | | |
| | | | <u>.</u> | <u>l</u> | | <u> </u> | |
| Uses Observ | ed. | | | | | | |
| ☐ Swimming | | ☐ Skin diving | ☐ SCUBA di | ivina | ☐ Tubin | a | ☐ Water Skiing |
| ☐ Wind surfi | | ☐ Kayaking | □ Boating | ····9 | □ Wadir | • | ☐ Rafting |
| ☐ Hunting | <u></u> | ☐ Trapping | □ Fishing | | | of the above | ☐ Other: |
| Describe: | | Παρριίι | | | E NOIC | Of the above | Li Other. |
| | | | | | | | |
| | | | | | | | |

| WBID# | 447 | 7 |
|--------|-----|---|
| Site # | | 3 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Conditi | ons: | | | | | |
|------------------------|---------------------|---------------------|-------------------|-------------|------------|-------------|
| ☐ City/County parks | □ playgrounds | ☐ MDC conservation | on lands 🔲 Urb | ban areas | ☐ Rural R | esidential |
| ☐ Campgrounds | ☐ State parks | ☐ National Forests | □ Nat | ture trails | ☐ Stairs/w | valkways |
| ☐ Boating accesses | ☑ Fence | ☐ No tresspass sign | n □ Ste | ep Slopes | ☐ Other: | - |
| Comments: | | · | • | | | |
| pasture, leased huntin | g ground | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Evidence of Human | | | | | | |
| Roads | ☐ Foot path/prints | | | mping Sites | ☐ Rope s | |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Discharge | e □ Fist | hing Tackle | ☐ Livesto | ck watering |
| comments/other: | | | | | | |
| | | | | | | |
| none | | | | | | |
| | | | | | | |
| | | | | | | |
| Substrate: | | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mud/0 | Clay | % Bedrock |
| /0 CUDDIG | 20 | 70 | /0 OIII | 76 Mua/C | Jiay | /0 Dedicon |
| | | | | 10 | | |
| Aquatic Vegatation: | | | | | | |
| 714 | | | | | | |
| vegetation on all bank | s and none in water | | | | | |
| Vogotanon en e | J Gild Herre II. | | | | | |
| | | | | | | |
| <u> </u> | | | | | | |
| Water Characteristic | s: | | | | | |
| 0.1 | | | ☐ Chemical | - I | None | ☐ Other: |
| Odor: | ☐ Sewage | ☐ Musky | □ Chemicai | <u> </u> | | L Other. |
| Odor: Color: | ☐ Sewage ☐ Clear | | ☐ Chemical ☐ Gray | | Milky | ☑ Other: |
| | | | | | | |
| | | □Green □ Solids | | ☑ nts ☑ ſ | | ☑ Other: |

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreation |
|---|
|---|

| Channel Feature | Distance from | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|-------------------------|---|-----------------|------------------------------------|---------------------|---------------|
| | access location (m) | | | | |
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| riiiiieiits. (Piease re | ecord any additional comments | ileie.) | | | |
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| ease verify that ye | ou have completed all s | ections, checke | rd all applicable | boxes, and that the | form is |
| omplete. | ou have completed all s gilisa gould | ections, checke | ed all applicable Date of Survey: | | form is |

Position: field team leader

| | | | | | | | | | | | | | | | | | | Disso | ivea Ox | tygen | | |
|----------------------|-----------------|---------------------|-----------------|-------------------|-----------------|-----------|--------------------|------------|-----------------|------------|-----------------|-----------------|-----------------|-----------|--------------|-----------|-----------------|------------|-----------------|-----------|-----------------|----------|
| | Waterbo | ody ID: | 447 | | - | Site #: | 3 | | | | | | | | | Date: | 9.19.07 | 7 | | Time: | 16:50 | |
| | Estimate | ed Chanr | nel Incisi | on: | 3.0 | (m) (hei | ight betw | een low b | ank wid | th and w | ater) | | | | | | | Oxygen: | 1) | 8.8 | (mg/L) | |
| | | cation - l UTM X | • | UTM X) 0421986 | | - | Y), Hori UTM Y: | izontal Ac | curacy I | | • | DOP / F0 +/- | OM) 12.2 | (meters) | | | | l Oxygen: | | | (% sat) | |
| | | UTM X | | 0421975 | | | UTM Y: | | 448802 | | | +/- | 14.3 | (meters) | | Di | | | | | | |
| | | | | | | 3.4 | | (meters) | | ength of | - | - | | 150 | (meters) | | | fic Cond: | | | (µS/cm) | |
| | (To dete | ermne Le | ength of I | Reach) | | | | | (2 | 20x avera | ige strear | n width) | | | | Wa | iter Ten | nperature: | | 21.3 | (°C) | |
| | Fiel | d Staff: | Drew D | odson | and | Gilisa G | ould | | | | | | | ı | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 | 1 | 0 | 2 | 0 | 3 | (| 04 | 0 |)5 | 0 | 6 | (| 07 | 08 | 3 | | 09 | 1 | 0 | 13 | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.5 | 0.05 | 0.4 | 0.06 | 0.5 | 0.05 | 0.6 | 0.05 | 0.6 | 0.05 | 0.3 | 0.05 | 0.2 | 0.01 | 0.2 | 0.05 | 0.18 | 0.05 | 0.2 | 0.05 | 0.3 | 0.05 |
| 2 | 0.9 | 0.10 | 0.7 | 0.15 | 0.9 | 0.20 | 1.3 | 0.05 | 1.1 | 0.10 | 0.5 | 0.05 | 0.4 | 0.05 | 0.4 | 0.10 | 0.36 | 0.10 | 0.4 | 0.10 | 0.5 | 0.15 |
| 3 | 1.4 | 0.20 | 1.1 | 0.30 | 1.4 | 0.25 | 1.9 | 0.00 | 1.7 | 0.20 | 0.8 | 0.05 | 0.5 | 0.05 | 0.5 | 0.15 | 0.54 | 0.15 | 0.5 | 0.15 | 0.8 | 0.15 |
| 4 | 1.8 | 0.15 | 1.5 | 0.30 | 1.8 | 0.25 | 2.6 | 0.00 | 2.2 | 0.25 | 1.1 | 0.10 | 0.7 | 0.10 | 0.7 | 0.15 | 0.72 | 0.20 | 0.7 | 0.15 | 1.1 | 0.15 |
| 5 | 2.3 | 0.15 | 1.9 | 0.25 | 2.3 | 0.20 | 3.2 | 0.10 | 2.8 | 0.20 | 1.4 | 0.10 | 0.9 | 0.10 | 0.9 | 0.15 | 0.9 | 0.20 | 0.9 | 0.15 | 1.4 | 0.15 |
| 6 | 2.8 | 0.20 | 2.2 | 0.20 | 2.8 | 0.15 | 3.8 | 0.15 | 3.3 | 0.25 | 1.6 | 0.10 | 1.1 | 0.10 | 1.1 | 0.20 | 1.08 | 0.20 | 1.1 | 0.15 | 1.6 | 0.15 |
| 7 | 3.2 | 0.20 | 2.6 | 0.05 | 3.2 | 0.10 | 4.5 | 0.25 | 3.9 | 0.15 | 1.9 | 0.20 | 1.3 | 0.15 | 1.3 | 0.20 | 1.26 | 0.15 | 1.3 | 0.10 | 1.9 | 0.10 |
| 8 | 3.7 | 0.25 | 3.0 | 0.10 | 3.7 | 0.05 | 5.1 | 0.30 | 4.4 | 0.20 | 2.2 | 0.15 | 1.4 | 0.05 | 1.4 | 0.15 | 1.44 | 0.15 | 1.4 | 0.10 | 2.2 | 0.10 |
| 9 | 4.1 | 0.15 | 3.3 | 0.05 | 4.1 | 0.01 | 5.8 | 0.05 | 5.0 | 0.10 | 2.4 | 0.05 | 1.6 | 0.05 | 1.6 | 0.05 | 1.62 | 0.10 | 1.6 | 0.05 | 2.4 | 0.05 |
| Right Bank | 4.6 | 0.00 | 3.7 | 0.00 | 4.6 | 0.00 | 6.4 | 0.00 | 5.5 | 0.00 | 2.7 | 0.00 | 1.8 | 0.00 | 1.8 | 0.00 | 1.8 | 0.00 | 1.8 | 0.00 | 2.7 | 0.00 |
| Feature Type | 1** | ın | *** | ın | *** | ın | 357 | un | *** | ın | rif | fle | | ffle | ru | n | | un | ru | ın | **11 | n |
| riffle, run, or pool | TI. | ın | 11 | 111 | I(| (0.11) | 1.6 | uii | 11 | 411 4 1 | 111 | 110 | 11. | 1110 | 14 | 11 | 1 | ull | 11 | 111 | ru | 11 |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing weted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

5.76 MAXIMUM

1.38 MEDIAN

| Signed: gilisa gould Date: 10.04.07 | Signed: gilisa gould Da | ate: | 10.04.07 | |
|-------------------------------------|-------------------------|------|----------|--|
|-------------------------------------|-------------------------|------|----------|--|

| WBID# | 447 |
|--------|-----|
| Site # | 4 |

| Date & Time: | 9.19.07 | 18:00 | | Site Location Description (e.g. road crossing): | | | | | | |
|---------------|------------|-----------------------|----------------|---|--------------|----------------|-----------------|--|--|--|
| Personnel: | D. Dods | son & G. Gould | | Road 130 | | | | | | |
| Current Weath | ner Cond | ditions: clear | | Facility Nar | WTF | | | | | |
| Weather cond | itions for | r the past 10 days: r | no precip | Permit Num | nber: | MO 0123081 | | | | |
| Drought condi | tions?: N | No drought ☑ ; Phas | se I □ ; Phase | ։ II □ ; Phas | e III □ ; Pl | hase IV □ ; Uı | nknown 🗆 | | | |
| | | | | | | | | | | |
| Site Location | | | | | | | | | | |
| | I | (Universal Transvers | 1 | | Meters | | | | | |
| Site 01 | Easting | (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | ccuracy: Meters | | | |
| | <u> </u> | 0421762 | | 4486327 | | | 12.8 | | | |
| Site 11 | Easting | (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | ccuracy: Meters | | | |
| | | 0421810 | | 4486420 | | | 5.2 | | | |
| Photos: | | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose | | | |
| 59 | | log jam | 60 | downstrear | m | 61 | upstream | | | |
| | | | | | | | | | | |
| Photo ID# | Р | Photo Purpose | Photo ID# | Photo F | ourpose | Photo ID# | Photo Purpose | | | |
| | | | | <u> </u> | | | | | | |
| | | | | | | | | | | |
| Photo ID# | P | hoto Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | |
| | | | | <u> </u> | | | | | | |
| | | | | | | | | | | |
| Uses Observe | ed: | | | | | | • | | | |
| ☐ Swimming | J | ☐ Skin diving | ☐ SCUBA di | iving | ☐ Tubin | g | ☐ Water Skiing | | | |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | □ Wadir | ng | ☐ Rafting | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ☑ None o | of the above | ☐ Other: | | | |
| Describe: | | | | | | | | | | |
| none | | | | | | | | | | |
| | | | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 4 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Conditi | ons: | | | | |
|--|------------------------------------|---------------------------------|-------------------|-----------------------|---|
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservation | on lands □ Urbaı | n areas | ☐ Rural Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | | | ☐ Stairs/walkways |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sig | | | ☑ Other: |
| Comments: | | <u></u> | | · · · | |
| corn fields | | | | | |
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| Fridance of Human I | (1 | | | | |
| Evidence of Human I | | □ De els/relette res | I П Сотто | :: Citoo | □ Dana avvince |
| ☐ Roads ☐ RV/ATV Tracks | ☐ Foot path/prints ☐ Fire pit/ring | ☐ Dock/platform☐ NPDES Discharg | | ing Sites g Tackle | ☐ Rope swings ☐ Livestock watering |
| Comments/other: | ☐ Fire piviling | INPUES DISCHARY | е Гп стотит | grackie | ☐ LiveStock watering |
| comments/other. | | | | | |
| none | | | | | |
| Hone | | | | | |
| | | | | | |
| <u> </u> | | | | | |
| Substrate: | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mud/C | lay % Bedrock |
| | | 70 | | 30 | |
| * 41 ** 4 . 4 * | | | | | |
| Aquatic Vegatation: | | | | | |
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| vegetation only on har | des | | | | |
| vegetation only on bar | ıks | | | | |
| vegetation only on bar | ıks | | | | |
| vegetation only on bar | nks | | | | |
| vegetation only on bar Water Characteristic | | | | | |
| Water Characteristic | s: | □ Musky | □ Chemical | ☑ N | lone □ Other: |
| | | □ Musky □Green | | ☑ N ☑M | |
| Water Characteristic | s: □ Sewage | | □ Chemical □ Gray | | |
| Water Characteristic | s: □ Sewage | | | ☑M | ilky ☑ Other: brown lone □ Other: |

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational use | Additional Stream | n Morphology: | (Record isolated pools | s or other features identified | during the survey that ma | v support recreational uses |
|---|-------------------|---------------|------------------------|--------------------------------|---------------------------|-----------------------------|
|---|-------------------|---------------|------------------------|--------------------------------|---------------------------|-----------------------------|

| access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
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| | ections, checke | d all applicable | boxes, and that the f | la |
| u have completed all s | | | | orm is |
| | ord any additional comments l | cord any additional comments here.) | cord any additional comments here.) | cord any additional comments here.) |

Position: field team leader

| | | | | | | | | | | | | | | | | | | Disso | ivea Ox | vygen | | |
|-----------------------|-----------------|------------------------------|--|--------------------|-----------------|-----------|------------------------------|------------|--------------------------------|-----------|-----------------|------------------------|--------------------|-----------|--------------|-----------|-----------------|------------|-----------------|-----------|-----------------|----------|
| | | ody ID: | | | • | Site #: | | | | | | | | | | Date: | 9.19.07 | , | | Time: | 18:00 | |
| | | | | | | | | reen low b | | | | | | | | D | issolved | Oxygen: | | 7.3 | (mg/L) | |
| | 01 | cation - l UTM X UTM X | <u>: </u> | 0421762 0421810 | 2 | . 1 | Y), Hori UTM Y: UTM Y: | | curacy E 4486327 4486420 | 7 | ` | DOP / FO +/- +/- | OM) 12.8 5.2 | (meters) | | Di | issolved | Oxygen: | | | (% sat) | |
| | | e Stream | | 0421810 |) | 4.3 | | (meters) | | ength of | • | | | / | (matara) | | Speci | fic Cond: | | | (µS/cm) | |
| | _ | ermne Le | | Reach) | | 4.3 | | (meters) | | 0x avera | • | | 130 | | (meters) | Wa | iter Ten | nperature: | | 21.2 | (°C) | |
| | Fie | ld Staff: | Drew D | odson | and | Gilisa G | ould | | | | | | | | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | (|)1 | 0 | 2 | 0 | 3 | (| 04 | 0 | 5 | 0 | 6 | (|)7 | 08 | 3 | | 09 | 1 | 0 | 1 | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.6 | 0.05 | 0.2 | 0.05 | 0.3 | 0.01 | 0.4 | 0.05 | 0.4 | 0.05 | 0.2 | 0.10 | 0.5 | 0.05 | 0.6 | 0.01 | 0.64 | 0.15 | 0.6 | 0.10 | 0.6 | 0.30 |
| 2 | 1.1 | 0.15 | 0.4 | 0.20 | 0.5 | 0.05 | 0.7 | 0.01 | 0.7 | 0.05 | 0.4 | 0.20 | 0.9 | 0.15 | 1.3 | 0.30 | 1.28 | 0.35 | 1.1 | 0.05 | 1.1 | 0.45 |
| 3 | 1.7 | 0.20 | 0.5 | 0.20 | 0.8 | 0.10 | 1.1 | 0.15 | 1.1 | 0.10 | 0.5 | 0.20 | 1.4 | 0.20 | 1.9 | 0.40 | 1.92 | 0.50 | 1.7 | 0.10 | 1.7 | 0.45 |
| 4 | 2.2 | 0.20 | 0.7 | 0.20 | 1.1 | 0.15 | 1.5 | 0.15 | 1.5 | 0.10 | 0.7 | 0.20 | 1.8 | 0.25 | 2.6 | 0.50 | 2.56 | 0.45 | 2.2 | 0.20 | 2.2 | 0.45 |
| 5 | 2.8 | 0.20 | 0.9 | 0.15 | 1.4 | 0.15 | 1.9 | 0.15 | 1.9 | 0.15 | 0.9 | 0.15 | 2.3 | 0.25 | 3.2 | 0.50 | 3.2 | 0.25 | 2.8 | 0.25 | 2.8 | 0.45 |
| 6 | 3.3 | 0.15 | 1.1 | 0.15 | 1.6 | 0.20 | 2.2 | 0.20 | 2.2 | 0.20 | 1.1 | 0.15 | 2.8 | 0.15 | 3.8 | 0.60 | 3.84 | 0.10 | 3.3 | 0.35 | 3.3 | 0.40 |
| 7 | 3.9 | 0.15 | 1.3 | 0.10 | 1.9 | 0.20 | 2.6 | 0.00 | 2.6 | 0.15 | 1.3 | 0.15 | 3.2 | 0.40 | 4.5 | 0.60 | 4.48 | 0.10 | 3.9 | 0.40 | 3.9 | 0.35 |
| 8 | 4.4 | 0.15 | 1.4 | 0.05 | 2.2 | 0.10 | 3.0 | 0.05 | 3.0 | 0.10 | 1.4 | 0.10 | 3.7 | 0.35 | 5.1 | 0.60 | 5.12 | 0.20 | 4.4 | 0.40 | 4.4 | 0.30 |
| 9 | 5.0 | 0.05 | 1.6 | 0.01 | 2.4 | 0.05 | 3.3 | 0.05 | 3.3 | 0.05 | 1.6 | 0.05 | 4.1 | 0.15 | 5.8 | 0.40 | 5.76 | 0.20 | 5.0 | 0.10 | 5.0 | 0.20 |
| Right Bank | 5.5 | 0.00 | 1.8 | 0.00 | 2.7 | 0.00 | 3.7 | 0.00 | 3.7 | 0.00 | 1.8 | 0.00 | 4.6 | 0.00 | 6.4 | 0.00 | 6.4 | 0.00 | 5.5 | 0.00 | 5.5 | 0.00 |
| Feature Type | | | | | 1: | eci . | | ca - | ء: | ra . | | | | | | | | | | 1 | a | a.1 |
| (riffle, run, or pool | r | un | rı | ın | rii | fle | r1 | ffle | rii | fle | ru | 111 | r | un | ru | П | r | un | pc | 100 | po | ΟI |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.60 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.15 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1)

All measurements to be taken to the nearest $0.01\ \mathrm{meter.}$

| Signed: | gilisa gould | Date: | 10.04.07 | |
|---------|--------------|-------|----------|--|
| | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 5 |

| Date & Time: 9. Personnel: D | .19.07 18:55 | | | | | |
|------------------------------|---------------------------|----------------|---------------|-------------|-----------------|----------------|
| Personnel: D | | | Site Location | on Descrip | tion (e.g. road | crossing): |
| i ersonner. D | . Dodson & G. Gould | | | 150th Roa | ad | |
| Current Weather | r Conditions: clear | | Facility Nar | ne: | Blythedale W | WTF |
| Weather condition | ons for the past 10 days: | no precip. | Permit Nun | nber: | MO 0123081 | |
| Drought conditio | ns?: No drought ☑ ; Pha | se I □ ; Phase | · II □ ; Phas | e III □ ; P | hase IV □ ; Ur | nknown 🗆 |
| | | | | | | |
| Site Location: | | | | | | |
| Location Coordin | nates (Universal Transver | se Mercator Pi | rojection, In | Meters | | |
| Site 01 E | asting (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | curacy: Meters |
| | 0421682 | | 4483733 | | | 6.4 |
| Site 11 E | asting (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | curacy: Meters |
| | 0421617 | | 4483564 | | | 5.2 |
| Photos: | | | | | | |
| Photo ID# | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose |
| 62 | downstream | 63 | upstream | | 64 | livestock |
| | | | | | | |
| Photo ID# | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose |
| | | | | | | |
| DI 1 ID# | DI 4 D | DI 1 1D# | DI 1 5 | | DI 1 1D# | DI 4 D |
| Photo ID# | Photo Purpose | Photo ID# | Pnoto F | Purpose | Photo ID# | Photo Purpose |
| | | | | | | |
| | | | | | | |
| Uses Observed | | | | 1 | | |
| ☐ Swimming | ☐ Skin diving | ☐ SCUBA d | iving | ☐ Tubin | • | ☐ Water Skiing |
| ☐ Wind surfing | ☐ Kayaking | ☐ Boating | | ☐ Wadir | ng | ☐ Rafting |
| ☐ Hunting | ☐ Trapping | ☐ Fishing | | ✓ None | of the above | ☐ Other: |
| Describe: | | | | | | |
| | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 5 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Condit | tions: | | | |
|---|------------------------------------|---------------------------------------|---------------------------------|------------------------------------|
| ☐ City/County parks | | ☐ MDC conservation land | s 🛘 Urban areas | ☐ Rural Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | ☐ Nature trails | ☐ Stairs/walkways |
| ☐ Boating accesses | ☑ Fence | ☐ No tresspass sign | ☐ Steep Slopes | ☑ Other: |
| Comments: pasture | | | | |
| Evidence of Human ☐ Roads | Use: | □ Dock/platform | ☐ Compine Sites | To Popo swings |
| ☐ ROads | ☐ Fire pit/ring | ☐ NPDES Discharge | ☐ Camping Sites☐ Fishing Tackle | ☐ Rope swings ☐ Livestock watering |
| comments/other: none | | | | |
| | | | | |
| Substrate: % Cobble | % Gravel | % Sand % Silt | % Mud/0 100 | Clay % Bedrock |
| % Cobble Aquatic Vegatation: | : | % Sand % Silt | | Clay % Bedrock |
| % Cobble Aquatic Vegatation: grasses on bank and Water Characteristic | in water except where | e cows eroded the soil | 100 | |
| % Cobble Aquatic Vegatation: grasses on bank and Water Characteristic Odor: | in water except where cs: □ Sewage | e cows eroded the soil ☐ Musky ☐ Che | 100 mical ☑ | None ☐ Other: |
| % Cobble Aquatic Vegatation: grasses on bank and Water Characteristic | in water except where | e cows eroded the soil | 100 mical ☑ | None □ Other: Milky ☑ Other: |
| % Cobble Aquatic Vegatation: grasses on bank and Water Characteristic Odor: | in water except where cs: □ Sewage | e cows eroded the soil | mical | None ☐ Other: |

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses |
|--|
|--|

| Comments: (Please record any additional comments here.) Very muddy because this whole site has open access to cattle Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete. Surveyor's Signature:gilisa gouldDate of Survey:9.19.07 Organization:SES, IncPosition:field team leader | | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|---|----------------------------------|-----------------------------------|------------------|-------------------|---------------------|---------------|
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. arveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | access location (III) | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. surveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. surveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. arveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. arveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | • | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is mplete. Try muddy because this whole site has open access to cattle | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is omplete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is implete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | omments: (Please red | cord any additional comments | here.) | | | |
| ease verify that you have completed all sections, checked all applicable boxes, and that the form is implete. rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | ry muddy because i | inis whole site has open | access to cattle | | | |
| rveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
| omplete. urveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
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| urveyor's Signature: gilisa gould Date of Survey: 9.19.07 | | | | | | |
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| | | u have completed all s | ections, checke | ed all applicable | boxes, and that the | form is |
| | | u have completed all s | ections, checke | ed all applicable | boxes, and that the | form is |
| Organization: SES, Inc. Position: field team leader | omplete. | · | | | | form is |
| Organization: SES, Inc. Position: field team leader | omplete. | · | | | | form is |
| | omplete. urveyor's Signature: | gilisa gould | | _Date of Survey: | 9.19.07 | form is |

| | | | | | | | | | | | | | | | | | | Disso | ivea Ox | ygen | | |
|---------------------|-----------------|---------------|-----------------|---------------|-----------------|--------------|-----------------|---------------|-----------------|-------------|-----------------|--------------|-----------------|-----------|--------------|--------------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 447 | | | Site #: | 5 | | | | | | | | | Date: | 9.19.07 | | | Time: | 18:55 | |
| | Estimate | ed Chanr | nel Incisi | on: | 2.9 | (m) (hei | ight betw | een low b | ank wid | th and wa | ater) | | | | | | | Oxygen: | | | (mg/L) | |
| | | | | | | | | zontal Ac | - | | (EPE / P | DOP / FO | OM) | | | | | , | | | | |
| | | UTM X | | 0421682 | | | UTM Y: | | 4483733 | | | +/- | 6.4 | (meters) | | D | issolved | Oxygen: | | | (% sat) | |
| | 11 | UTM X | <u> </u> | 0421617 | / | | UTM Y: | | 4483564 | + | • | +/- | 5.2 | (meters) | • | | Specif | ic Cond: | | | (μS/cm) | |
| | Average | Stream | Width: | | | 4.8 | | (meters) | L | ength of | Survey S | Segment: | | 150 | (meters) | | эрссп | ic Cond. | | | (μο/τιι) | |
| | _ | | ength of I | Reach) | | | | | (2 | 0x avera | ge strear | n width) | | | | Wa | iter Tem | perature: | | 21.1 | (°C) | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | Fiel | d Staff: | Drew D | odson | and | Gilisa G | ould | | | | | | | | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 | 1 | 0 | 2 | 0 | 3 | (|)4 | 0 | 5 | 0 | 6 | | 07 | 0 | 8 | 0 |)9 | 1 | 0 | 1: | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Donath (co.) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |
| Left Bank | U | 0 | U | 0 | U | 0 | 0 | 0 | U | 0 | U | 0 | U | 0 | U | 0 | U | 0 | U | 0 | U | 0 |
| 1 | 0.5 | 0.05 | 0.4 | 0.10 | 0.6 | 0.05 | 0.5 | 0.05 | 0.5 | 0.10 | 0.5 | 0.05 | 0.6 | 0.15 | 0.5 | 0.05 | 0.55 | 0.30 | 0.5 | 0.15 | 0.5 | 0.05 |
| 2 | 0.9 | 0.10 | 0.7 | 0.30 | 1.1 | 0.10 | 0.9 | 0.10 | 0.9 | 0.10 | 0.9 | 0.35 | 1.1 | 0.15 | 0.9 | 0.30 | 1.1 | 0.40 | 0.9 | 0.35 | 0.9 | 0.30 |
| 3 | 1.4 | 0.20 | 1.1 | 0.30 | 1.7 | 0.30 | 1.4 | 0.15 | 1.4 | 0.25 | 1.4 | 0.30 | 1.7 | 0.15 | 1.4 | 0.50 | 1.65 | 0.40 | 1.4 | 0.50 | 1.4 | 0.50 |
| 4 | 1.8 | 0.30 | 1.5 | 0.25 | 2.2 | 0.30 | 1.8 | 0.20 | 1.8 | 0.30 | 1.8 | 0.25 | 2.2 | 0.10 | 1.8 | 0.45 | 2.2 | 0.45 | 1.8 | 0.55 | 1.8 | 0.60 |
| 5 | 2.3 | 0.20 | 1.9 | 0.30 | 2.8 | 0.30 | 2.3 | 0.25 | 2.3 | 0.20 | 2.3 | 0.10 | 2.8 | 0.15 | 2.3 | 0.50 | 2.75 | 0.40 | 2.3 | 0.55 | 2.3 | 0.60 |
| 6 | 2.8 | 0.20 | 2.2 | 0.20 | 3.3 | 0.25 | 2.8 | 0.30 | 2.8 | 0.25 | 2.8 | 0.30 | 3.3 | 0.10 | 2.8 | 0.35 | 3.3 | 0.30 | 2.8 | 0.55 | 2.8 | 0.65 |
| 7 | 3.2 | 0.25 | 2.6 | 0.10 | 3.9 | 0.20 | 3.2 | 0.20 | 3.2 | 0.25 | 3.2 | 0.45 | 3.9 | 0.30 | 3.2 | 0.15 | 3.85 | 0.30 | 3.2 | 0.50 | 3.2 | 0.55 |
| 8 | 3.7 | 0.20 | 3.0 | 0.05 | 4.4 | 0.20 | 3.7 | 0.10 | 3.7 | 0.20 | 3.7 | 0.30 | 4.4 | 0.40 | 3.7 | 0.05 | 4.4 | 0.25 | 3.7 | 0.25 | 3.7 | 0.40 |
| 9 | 4.1 | 0.10 | 3.3 | 0.05 | 5.0 | 0.10 | 4.1 | 0.05 | 4.1 | 0.10 | 4.1 | 0.05 | 5.0 | 0.15 | 4.1 | 0.01 | 4.95 | 0.30 | 4.1 | 0.10 | 4.1 | 0.25 |
| ight Bank | 4.6 | 0.00 | 3.7 | 0.00 | 5.5 | 0.00 | 4.6 | 0.00 | 4.6 | 0.00 | 4.6 | 0.00 | 5.5 | 0.00 | 4.6 | 0.00 | 5.5 | 0.00 | 4.6 | 0.00 | 4.6 | 0.00 |
| eature Type | 1.0 | 0.00 | 5.7 | 0.00 | 0.0 | 0.00 | 1.0 | 0.00 | 1.0 | 0.00 | 1.0 | 0.00 | 5.5 | 0.00 | 1.0 | 0.00 | 5.5 | 0.00 | 1.0 | 0.00 | 1.0 | 0.00 |
| iffle, run, or pool | rı | ın | rı | ın | rı | ın | r | ın | rı | ın | rı | ın | r | un | ru | ın | rı | un | ru | ın | ru | n |
| | | ill be messur | red beginning | on left desce | anding bank | (O denth) an | d finishing or | right descend | ling bank (f) | denth) This | width is the | wattad width | | | | | | | | | | |

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

0.65 MAXIMUM

0.25 MEDIAN

Signed: gilisa gould Date: 10.04.07

| WBID# | 447 |
|--------|-----|
| Site # | 6 |

| Date & Time: | 9.20.07 | 8:45 | | Site Location | on Descrip | tion (e.g. road | crossing): | |
|-------------------|-----------|-----------------------|----------------|---------------|--------------|-----------------|--------------------|-------|
| Personnel: | D. Dods | son & G. Gould | | | 165 Road | | | |
| Current Weath | ner Cond | ditions: clear | | Facility Nar | ne: | Blythedale W | WTF | |
| Weather cond | itions fo | r the past 10 days: r | no precip. | Permit Nun | nber: | MO 0123081 | | |
| Drought condi | tions?: N | No drought ☑ ; Pha | se I □ ; Phase | · II □ ; Phas | e III □ ; PI | hase IV □ ; Ur | nknown 🗆 | |
| | | | | | | | | |
| Site Location | | | | | | | | |
| | | (Universal Transver | 1 | • | Meters | | | |
| Site 01 | Lasting | (UTM X): | Northing (UTN | <u> </u> | | Horizontal Ac | • | eters |
| | | 0420128 | | 4481239 | | | 5.5 | |
| Site 11 | Easting | (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | curacy: Me | eters |
| | | 0420155 | | 4481100 | | | 5.8 | |
| Photos: | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose | |
| 65 | | upstream | 66 | downstrear | n | 67 | livestock watering | |
| | | | | | | | | |
| Photo ID# | Р | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | |
| | | | | | | | | |
| DI 1 ID# | | N (D | DI 1 1D# | DI 1 5 | | DI 1 1D# | DI I D | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo F | urpose | Photo ID# | Photo Purpose | |
| | | | | | | <u> </u> | | |
| | | | | | | | | |
| Uses Observe | | | ı | | | | <u> </u> | |
| ☐ Swimming | | ☐ Skin diving | ☐ SCUBA d | iving | ☐ Tubin | | ☐ Water Skiing | |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | ☐ Wadir | ng | ☐ Rafting | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ✓ None | of the above | ☐ Other: | |
| Describe: none | | | | | | | | |
| | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 6 |

Data Sheet B- Site Characterization (Continued)

| sidential |
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| lkways |
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| ngs |
| watering |
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| |
| Redrock |
| Bedrock |
| |
| ☐ Other: |
| Other: |
| |

Channel Feature

Distance from

Field Data Sheets for Recreational Use Stream Surveys

Length (m)

Median Depth (m)

Max Depth (m)

Data Sheet B - Site Characterization (continued)

| | Additional Stream | n Morphology: | (Record isolated pools | or other features identified during | g the survey that ma | v support recreational uses) |
|--|-------------------|---------------|------------------------|-------------------------------------|----------------------|------------------------------|
|--|-------------------|---------------|------------------------|-------------------------------------|----------------------|------------------------------|

Width (m)

| | access location (m) | | | | |
|------------------------------------|--|--------------------|--------------------|-------------------------|----------|
| | | | | | |
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| omments: (Please red | cord any additional comments | here.) | | | |
| hie etroom hae widor | ned by 2 or 3 times as m | uch as the provid | us sitos. Elow n | ot as good until last t | rancoct |
| nis stream nas wider | ied by 2 or 3 times as m | luch as the previo | ous sites. Flow in | ot as good until last t | ransect. |
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| Diagon you'' state to yo | | | d all annliachta | | forms in |
| | u have completed all s | ections, checke | d all applicable | boxes, and that the | form is |
| | u have completed all s | ections, checke | d all applicable | boxes, and that the | form is |
| | u have completed all s | ections, checke | d all applicable | boxes, and that the | form is |
| complete. | | | | | form is |
| complete. | u have completed all s gilisa gould | | | | form is |
| complete. | | | | | form is |
| complete. Surveyor's Signature: | | | _Date of Survey: | | form is |

| | | | | | | | | | | | | | | | | | | Disso | ivea Ox | vygen | | |
|----------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|-----------------|-----------------|-------------|-----------------|--------------|-----------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|----------|
| | Waterbo | ody ID: | 447 | | _ | Site #: | 6 | | ı | | | | | | | Date: | 9.20.07 | , | | Time: | 8:45 | |
| | Estimate | ed Chanr | nel Incisi | on: | 1.7 | (m) (hei | ght betw | een low b | ank wid | th and wa | ater) | | | | | | | Oxygen: | | | (mg/L) | |
| | | | | | | | | izontal Ac | - | | • | | | | | | | | | | 1 | |
| | | UTM X | | 0420128 | | | UTM Y: | | 4481239 | | - | +/- | 5.5 | (meters) | | Di | ssolved | Oxygen: | | | (% sat) | |
| | 11 | UTM X | <u>:</u> | 0420155 |) | (| UTM Y: | | 4481100 | 0 | • | +/- | 5.8 | (meters) | | | Specif | fic Cond: | | | (uS/om) | |
| | Average | Stream | Width: | | | 8.3 | | (meters) | L | ength of | Survey S | Segment: | | 166 | (meters) | | Speci | ne cona. | | | (μο/спі) | |
| | | | ength of F | | | | | (| • | _ | ige strear | _ | | | (111 12) | Wa | ter Tem | perature: | | 18.4 | (°C) | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | Fiel | d Staff: | Drew D | odson | and | Gilisa G | ould | | | | | | | • | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 | 1 | 0 | 2 | 0 | 3 | (|)4 | 0 |)5 | 0 |)6 | | 07 | 08 | 3 | | 09 | 1 | 0 | 1 | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1.0 | 0.05 | 0.8 | 0.15 | 0.8 | 0.25 | 0.8 | 0.30 | 0.7 | 0.05 | 0.9 | 0.40 | 0.8 | 0.10 | 0.9 | 0.25 | 0 91 | 0.25 | 0.7 | 0.01 | 0.6 | 0.05 |
| 2 | 2.0 | | | | 1.6 | | 1.6 | 0.45 | 1.5 | | | | | | 1.8 | 0.50 | | 0.55 | 1.5 | | 1.3 | 0.20 |
| 2 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 3.0 | 0.30 | | | 2.5 | 0.60 | 2.5 | 0.50 | | | | | | 0.30 | 2.7 | 0.70 | | 0.75 | 2.2 | | | 0.20 |
| 4 | 4.0 | 0.30 | 3.3 | 0.45 | 3.3 | 0.50 | 3.3 | 0.35 | 2.9 | 0.60 | 3.6 | 0.80 | 3.3 | 0.35 | 3.6 | 0.85 | 3.64 | 0.80 | 2.9 | 0.25 | 2.6 | 0.25 |
| 5 | 5.1 | 0.30 | 4.1 | 0.50 | 4.1 | 0.45 | 4.1 | 0.25 | 3.7 | 0.80 | 4.6 | 0.70 | 4.1 | 0.30 | 4.6 | 0.60 | 4.55 | 0.90 | 3.7 | 0.26 | 3.2 | 0.25 |
| 6 | 6.1 | 0.25 | 4.9 | 0.55 | 4.9 | 0.45 | 4.9 | 0.30 | 4.4 | 0.85 | 5.5 | 0.45 | 4.9 | 0.30 | 5.5 | 0.45 | 5.46 | 0.80 | 4.4 | 0.50 | 3.8 | 0.20 |
| 7 | 7.1 | 0.25 | 5.7 | 0.60 | 5.7 | 0.40 | 5.7 | 0.30 | 5.1 | 0.65 | 6.4 | 0.35 | 5.7 | 0.35 | 6.4 | 0.40 | 6.37 | 0.45 | 5.1 | 0.50 | 4.5 | 0.15 |
| 8 | 8.1 | 0.30 | 6.6 | 0.50 | 6.6 | 0.30 | 6.6 | 0.20 | 5.8 | 0.40 | 7.3 | 0.40 | 6.6 | 0.40 | 7.3 | 0.15 | 7.28 | 0.15 | 5.8 | 0.40 | 5.1 | 0.10 |
| 9 | 9.1 | 0.20 | 7.4 | 0.35 | 7.4 | 0.10 | 7.4 | 0.05 | 6.6 | 0.20 | 8.2 | 0.25 | 7.4 | 0.30 | 8.2 | 0.05 | 8.19 | 0.10 | 6.6 | 0.15 | 5.8 | 0.05 |
| Right Bank | 10.1 | 0.00 | 8.2 | 0.00 | 8.2 | 0.00 | 8.2 | 0.00 | 7.3 | 0.00 | 9.1 | 0.00 | 8.2 | 0.00 | 9.1 | 0.00 | 9.1 | 0.00 | 7.3 | 0.00 | 6.4 | 0.00 |
| Feature Type | | | | | | | | | , | | | | | | | | ,,, | | , | | | |
| riffle, run, or pool | | ın | ru | | ru | | | un | | un | | ın | | un | ru | n | r | un | rı | ın | rif | fle |
| Notes: | Transects w | ill be measur | red heginning | on left descr | ending bank (| (0 denth) and | d finishing or | n right descend | ling bank (0 | denth) This | width is the | wetted width | | | | | | | | | | |

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

0.90 MAXIMUM

0.30 MEDIAN

| orgined: girisa gould Date: 10.04.07 | Signed: gilisa gould Date: 10.04.07 | |
|--------------------------------------|-------------------------------------|--|
|--------------------------------------|-------------------------------------|--|

| WBID# | 447 |
|--------|-----|
| Site # | 7 |

| <u> </u> | | | | <u> </u> | | | | | | |
|---------------|------------------|---------------------|-------------------|---------------------------|--------------|----------------------|----------------------|---------------|--|--|
| Date & Time: | 9.20.07 | 9:45 | <u>;</u> | Site Location | on Descrip | tion (e.g. road | crossing): | | | |
| Personnel: | D. Dods | son & G. Gould | | | Road 175 | | | | | |
| Current Weatl | ner Cond | ditions: clear | | Facility Nar | me: | Blythedale W | WTF | | | |
| Weather cond | litions fo | r the past 10 days: | no precip. | Permit Number: MO 0123081 | | | | | | |
| Drought condi | itions?: N | No drought ☑ ; Pha | se I □ ; Phase | ։ II □ ; Phas | e III □ ; Pl | hase IV □ ; Ur | nknown 🗆 | | | |
| | | | | | | | | | | |
| Site Location | | | | | | | | | | |
| | | (Universal Transver | rse Mercator Pr | rojection, In Meters | | | | | | |
| Site 01 | Easting (UTM X): | | | Northing (UTM Y): | | | Horizontal Accuracy: | | | |
| | | 0419862 | 4479231 | | | | 7.0 | | | |
| Site 11 | Easting | ı (UTM X): | Northing (UTM Y): | | | Horizontal Accuracy: | | | | |
| | | 0419856 | 4479116 | | | | | 6.1 | | |
| | | 0110000 | .1 | 1110110 | | | | 0 | | |
| Photos: | | | 1 | Т | | T | T | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purp | ose | | |
| 68 | | downstream | 69 | upstream | | | | | | |
| | | | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo Purpose | | Photo ID# | Photo Purp | Photo Purpose | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purp | ose | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | |
| ☐ Swimming | J | ☐ Skin diving | □ SCUBA di | iving | ☐ Tubin | g | ☐ Water Skiing | | | |
| ☐ Wind surfi | ng | ☐ Kayaking | □ Boating | | □ Wadir | ng | □ Rafting | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ☑ None | of the above | ☐ Other: | | | |
| Describe: | | 11 0 | <u> </u> | | | | 1 | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 7 |

| | | , | Continued) | | | |
|---|------------------------------------|--|------------------|---------------|---------------|--------------|
| | | | | | | |
| Surrounding Conditi | ons: | | | | | |
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservation la | ands 🛭 Urbar | n areas | ☑ Rural | Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | □ Nature | e trails | ☐ Stairs | /walkways |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sign | ☑ Steep | Slopes | ☑ Other | • |
| Comments: | | | • | - | | |
| crops, pasture | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Evidence of Human I | H _{aa} . | | | | | |
| | | □ Deal/platform | I 🗆 Compi | - ~ Citoo | I 🗆 Dono | in an |
| ☐ Roads ☐ RV/ATV Tracks | ☐ Foot path/prints ☐ Fire pit/ring | ☐ Dock/platform☐ NPDES Discharge | ☐ Campi | ing Sites | ☐ Rope | ock watering |
| comments/other: | ☐ Fire piviling | LI NYDES DISCHAIGE | Ш Пошц | g rackie | □ FIAE21 | OCK watering |
| none | | | | | | |
| Hone | | | | | | |
| • | | | | | | |
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| | | | | | | |
| | | | | | | |
| Substrate: | | | | | | |
| Substrate: % Cobble | | | Silt | % Mud/0 | Clay | % Bedrock |
| | % Gravel 20 | | Silt 10 | % Mud/0 | Clay | % Bedrock |
| % Cobble | | | | % Mud/0 | Clay | % Bedrock |
| | | | | % Mud/0 | Clay | % Bedrock |
| % Cobble Aquatic Vegatation: | | | | % Mud/0 | Clay | % Bedrock |
| % Cobble | | | | % Mud/0 | Clay | % Bedrock |
| % Cobble Aquatic Vegatation: | | | | % Mud/0 | Clay | % Bedrock |
| % Cobble Aquatic Vegatation: | | | | % Mud/0 | Clay | % Bedrock |
| % Cobble Aquatic Vegatation: | 20 | | | % Mud/0 | Clay | % Bedrock |
| % Cobble Aquatic Vegatation: banks vegetated | 20 s: | 70 | | | Clay | % Bedrock |
| % Cobble Aquatic Vegatation: banks vegetated Water Characteristics | 20 | 70 | 10 | ☑ 1 | | |
| % Cobble Aquatic Vegatation: banks vegetated Water Characteristic Odor: | 20 s: □ Sewage | 70 ☐ Musky ☐ Green ☐ Ø G | Chemical Gray | 고 고 기 전 | None Milky | □ Other: |
| % Cobble Aquatic Vegatation: banks vegetated Water Characteristic Odor: | 20 s: □ Sewage | 70 ☐ Musky ☐ C ☐ Green ☑ C ☐ Solids ☐ F | 10 Chemical | ☑ I | None | □ Other: |

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature

Distance from

Width (m)

Length (m)

Median Depth (m)

Max Depth (m)

| Channel Feature | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) | | | | |
|---------------------------------|--|-----------|-----------------|------------------|---------------|--|--|--|--|
| pool | 73.2 | 8.2 | 18.3 | ~1.7 | ~2 | | | | |
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| 0 | | | | | | | | | |
| | cord any additional comments l | nere.) | | | | | | | |
| none | | | | | | | | | |
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| Please verify that yo complete. | Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete. | | | | | | | | |
| Surveyor's Signature: | gilisa gould | | Date of Survey: | 9.20.07 | | | | | |

Position: field team leader

| | | | | | | | | | | | | | | | | | | DISSO | ivea Ox | kygen | | |
|-----------------------|-----------------|-------------------------|-----------------|--------------------|-----------------|-----------|-----------------------------|------------|--------------------|-----------|-----------------|------------|-----------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|----------|
| | | ody ID: | | | | | | | | | | | | | | Date: | 9.20.07 | | | Time: | 9:45 | |
| | | | | | | | | reen low b | | | | DOD / E | | | | D | issolved | Oxygen: | | 7.1 | (mg/L) | |
| | 01 | UTM X UTM X UTM X | <u> </u> | 0419862 0419856 | 2 | . 1 | Y), Hor UTM Y: UTM Y: | | 4479231 4479116 | | ` | +/- +/- | ЭМ) 7 6.1 | (meters) | | D | issolved | Oxygen: | | | (% sat) | |
| | | e Stream | | | | 9.1 | | (meters) | | ength of | | | | | (meters) | | Specia | fic Cond: | | | (µS/cm) | |
| | (To dete | ermne Le | ngth of I | Reach) | | | | | (2 | 0x avera | ge strear | n width) | | | | Wa | iter Tem | perature: | | 19.6 | (°C) | |
| | Fie | ld Staff: | Drew D | odson | and | Gilisa G | ould | | | | | | | | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 0 |)1 | 0 | 2 | 0 | 13 | (| 04 | 0 | 5 | 0 | 6 | (| 7 | 08 | 3 | | 09 | 1 | 0 | 1 | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.5 | 0.20 | 1.1 | 1.00 | 1.1 | 0.25 | 0.9 | 0.10 | 0.7 | 0.30 | 1.1 | 0.50 | 1.1 | 0.15 | 0.8 | 0.10 | 1.01 | 0.01 | 0.9 | 0.01 | 0.7 | 0.05 |
| 2 | 0.9 | 0.15 | 2.2 | 1.00 | 2.2 | 0.55 | 1.8 | 0.30 | 1.5 | 0.55 | 2.2 | 0.75 | 2.2 | 0.35 | 1.6 | 0.20 | 2.02 | 0.05 | 1.8 | 0.05 | 1.5 | 0.20 |
| 3 | 1.4 | 0.10 | 3.3 | 1.00 | 3.3 | 0.80 | 2.7 | 0.25 | 2.2 | 0.25 | 3.3 | 0.95 | 3.3 | 0.50 | 2.5 | 0.10 | 3.03 | 0.00 | 2.7 | 0.00 | 2.2 | 0.15 |
| 4 | 1.8 | 0.15 | 4.4 | 1.00 | 4.4 | 1.00 | 3.6 | 0.10 | 2.9 | 0.35 | 4.4 | 0.70 | 4.4 | 0.60 | 3.3 | 0.15 | 4.04 | 0.00 | 3.6 | 0.10 | 2.9 | 0.10 |
| 5 | 2.3 | 0.20 | 5.5 | 1.00 | 5.5 | 0.95 | 4.6 | 0.05 | 3.7 | 0.50 | 5.5 | 0.40 | 5.5 | 0.70 | 4.1 | 0.20 | 5.05 | 0.05 | 4.6 | 0.10 | 3.7 | 0.05 |
| 6 | 2.8 | 0.15 | 6.6 | 1.00 | 6.6 | 0.75 | 5.5 | 0.10 | 4.4 | 0.50 | 6.6 | 0.20 | 6.6 | 0.70 | 4.9 | 0.25 | 6.06 | 0.15 | 5.5 | 0.20 | 4.4 | 0.20 |
| 7 | 3.2 | 0.10 | 7.7 | 1.00 | 7.7 | 0.75 | 6.4 | 0.15 | 5.1 | 0.50 | 7.7 | 0.20 | 7.7 | 0.65 | 5.7 | 0.35 | 7.07 | 0.25 | 6.4 | 0.20 | 5.1 | 0.20 |
| 8 | 3.7 | 0.05 | 8.8 | 0.50 | 8.8 | 0.55 | 7.3 | 0.25 | 5.8 | 0.40 | 8.8 | 0.25 | 8.8 | 0.55 | 6.6 | 0.40 | 8.08 | 0.20 | 7.3 | 0.10 | 5.8 | 0.10 |
| 9 | 4.1 | 0.05 | 9.9 | 0.10 | 9.9 | 0.20 | 8.2 | 0.20 | 6.6 | 0.15 | 9.9 | 0.05 | 9.9 | 0.30 | 7.4 | 0.20 | 9.09 | 0.25 | 8.2 | 0.05 | 6.6 | 0.05 |
| Right Bank | 4.6 | 0.00 | 11.0 | 0.00 | 11.0 | 0.00 | 9.1 | 0.00 | 7.3 | 0.00 | 11.0 | 0.00 | 11.0 | 0.00 | 8.2 | 0.00 | 10.1 | 0.00 | 9.1 | 0.00 | 7.3 | 0.00 |
| Feature Type | | | | | | | | | | | | | · | | | | | | | | | |
| (riffle, run, or pool | rif | ffle | pc | ool | po | ool | r | un | ru | ın | rı | ın | n | un | ru | n | r | un | rif | fle | rif | fle |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

1.00 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.20 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: | gilisa gould | Date: | 10.04.07 | |
|---------|--------------|-------|----------|--|
| | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 8 |

| Date & Time: | 9.20.07 | 10:55 | | Site Location | on Descrip | tion (e.g. road | crossing): | | | |
|---------------|------------|-----------------------|-------------------|---------------------------|--------------|---------------------------|----------------|--|--|--|
| Personnel: | D. Dods | son & G. Gould | | | 195th St. | | | | | |
| Current Weat | her Cond | ditions: clear | | Facility Nar | ne: | Blythedale W | WTF | | | |
| Weather cond | litions fo | r the past 10 days: r | no precip. | Permit Number: MO 0123081 | | | | | | |
| Drought cond | itions?: N | No drought ☑ ; Pha | se I □ ; Phase | II □ ; Phas | e III □ ; PI | hase IV □ ; Ur | nknown 🗆 | | | |
| | | - | | | | | | | | |
| Site Location | | | | | | | | | | |
| | | (Universal Transver | se Mercator Pi | rojection, In | Meters | | | | | |
| Site 01 | Easting | ı (UTM X): | Northing (UTM Y): | | | Horizontal Ac | curacy: Meters | | | |
| | | 0418868 | 4476380 | | | 7.6 | | | | |
| Site 11 | Easting | ı (UTM X): | Northing (UTM Y): | | | Horizontal Accuracy: Mete | | | | |
| | | 0418859 | | | | 8.2 | | | | |
| | | 0418859 | | 4476258 | | | 0.2 | | | |
| Photos: | _ | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose | | | |
| 70 | | downstream | 71 | upstream | | | | | | |
| | | | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo Purpose | | Photo ID# | Photo Purpose | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | |
| Swimming | | ☐ Skin diving | ☐ SCUBA di | iving | ☐ Tubin | a | ☐ Water Skiing | | | |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | □ Wadir | | ☐ Rafting | | | |
| ☐ Hunting | <u> </u> | ☐ Trapping | ☐ Fishing | | | of the above | ☐ Other: | | | |
| Describe: | | п парріпу | L I ISIIIII | | E None | of the above | Duner. | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 8 |

Data Sheet B- Site Characterization (Continued)

| Surrounding Conditi | ons: | | | | | |
|----------------------------|--------------------|-----------------|--------------|-----------------|-----------|----------------|
| ☐ City/County parks | ☐ playgrounds | | vation lands | | | ıl Residential |
| ☐ Campgrounds | ☐ State parks | □ National For | ests | ☐ Nature trails | ☐ Stair | s/walkways |
| □ Boating accesses | ☐ Fence | ☐ No tresspass | s sign | ☐ Steep Slopes | ☑ Othe | er: |
| Comments: | | | | | | |
| CRP ground? (native | forbs) | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Evidence of Human | Use: | | | | | |
| ☐ Roads | ☐ Foot path/prints | □ Dock/platforn | | □ Camping Site | | e swings |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Discl | narge | ☐ Fishing Tackl | e 🗆 Lives | stock watering |
| comments/other: | | | | | | |
| none | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Substrate: | | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mu | d/Clay | % Bedrock |
| | | 90 | 10 | | | |
| | | | | | | |
| Aquatic Vegatation: | | | | | | |
| none, except banks ar | re venetated | | | | | |
| none, except banks at | c vegetated | | | | | |
| | | | | | | |
| | | | | | | |
| Water Characteristic | s: | | | | | |
| Odor: | ☐ Sewage | ☐ Musky | ☐ Chem | ical 5 | ☑ None | ☐ Other: |
| Color: | ☐ Clear | □Green | ☐ Gray | 5 | 2 Milky | ☑ Other: |
| | | | | | | brown |
| Bottom Deposit: | ☐ Sludge | ☐ Solids | ☐ Fine s | sediments 5 | ☑ None | ☐ Other: |
| Surface Deposit: | | | | | | ☐ Other: |

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature | Distance from | Width (m) | Length (m) | Median Depth (m) | Max Depth (m)

| Channel Feature | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) | | | | |
|--|-----------------------------------|-----------|------------------|-------------------|---------------|--|--|--|--|
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| Comments: (Please re | cord any additional comments I | here.) | | | | | | | |
| none | | | | | | | | | |
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| | | | | | | | | | |
| Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete. | | | | | | | | | |
| | | | | | | | | | |
| Surveyor's Signature: | gilisa gould | | _Date of Survey: | 9.20.07 | | | | | |
| Organization: | SES, Inc. | | Position: | field team leader | | | | | |
| = | | | _ | | | | | | |

| | | | | | | | | | | | | | | | | | | Disso | ivea Ox | ygen | | |
|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|-----------|--------------------|---------------------|---------------------|-------------------|-----------------|-----------------|-----------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 447 | | · | Site #: | 8 | | | | | | | | | Date: | 9.20.07 | | | Time: | 10:55 | |
| | Estimate | ed Chanr | nel Incisi | on: | 3.9 | (m) (hei | ight betw | een low b | ank wid | th and wa | ater) | | | | | | | Oxygen: | | 7.8 | (mg/L) | |
| | | cation - l UTM X | | UTM X) 0418868 | | | Y), Hori UTM Y: | zontal Ac | curacy I 4476380 | | | DOP / F0 +/- | OM) 7.6 | (meters) | | | | Oxygen: | | | (% sat) | |
| | | UTM X | | 0418859 | | • | UTM Y: | | 447625 | | | +/- | 8.2 | (meters) | | | | ' | | | | |
| | Average | Stream | Width: | | | | 5.7 | (meters) | I | ength of | Survey S | Segment: | | 150 | (meters) | | Specif | ic Cond: | | | (µS/cm) | |
| | _ | | ength of I | | | | 0., | (meters) | | 20x avera | | _ | | 100 | (meters) | Wa | iter Tem | perature: | | 20 | (°C) | |
| | Fiel | d Staff: | Drew D | odson an | d Gilisa | Gould | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | • | | | | | | | | |
| | | | ı | | | | 1 | | | Tra | nsect C | ross-Se | ction | | | | ı | | | | | |
| | 0 | 1 | 0 | 2 | 0 | 3 | (|)4 | 0 | 5 | 0 | 6 | |)7 | 0 | 8 | (|)9 | 1 | 0 | 1 | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.5 | 0.05 | 0.5 | 0.05 | 0.7 | 0.05 | 0.3 | 0.30 | 0.6 | 0.01 | 0.5 | 0.05 | 0.5 | 0.05 | 0.4 | 0.05 | 0.55 | 0.05 | 0.9 | 0.15 | 1.0 | 0.10 |
| 2 | 0.9 | 0.15 | 0.9 | 0.10 | 1.5 | 0.05 | 0.5 | 0.30 | 1.3 | 0.00 | 0.9 | 0.20 | 0.9 | 0.15 | 0.7 | 0.10 | 1.1 | 0.25 | 1.8 | 0.10 | 2.0 | 0.15 |
| 3 | 1.4 | 0.10 | 1.4 | 0.20 | 2.2 | 0.00 | 0.8 | 0.25 | 1.9 | 0.10 | 1.4 | 0.25 | 1.4 | 0.10 | 1.1 | 0.20 | 1.65 | 0.30 | 2.7 | 0.10 | 3.0 | 0.30 |
| 4 | 1.8 | 0.15 | 1.8 | 0.25 | 2.9 | 0.05 | 1.1 | 0.25 | 2.6 | 0.20 | 1.8 | 0.25 | 1.8 | 0.20 | 1.5 | 0.20 | 2.2 | 0.30 | 3.6 | 0.15 | 4.0 | 0.35 |
| 5 | 2.3 | 0.15 | 2.3 | 0.30 | 3.7 | 0.10 | 1.4 | 0.25 | 3.2 | 0.30 | 2.3 | 0.20 | 2.3 | 0.10 | 1.9 | 0.30 | 2.75 | 0.20 | 4.6 | 0.25 | 5.1 | 0.30 |
| 6 | 2.8 | 0.10 | 2.8 | 0.35 | 4.4 | 0.20 | 1.6 | 0.20 | 3.8 | 0.35 | 2.8 | 0.35 | 2.8 | 0.30 | 2.2 | 0.30 | 3.3 | 0.20 | 5.5 | 0.25 | 6.1 | 0.20 |
| 7 | 3.2 | 0.10 | 3.2 | 0.35 | 5.1 | 0.20 | 1.9 | 0.15 | 4.5 | 0.30 | 3.2 | 0.35 | 3.2 | 0.30 | 2.6 | 0.30 | 3.85 | 0.15 | 6.4 | 0.25 | 7.1 | 0.20 |
| 8 | 3.7 | 0.05 | 3.7 | 0.30 | 5.8 | 0.15 | 2.2 | 0.10 | 5.1 | 0.25 | 3.7 | 0.30 | 3.7 | 0.30 | 3.0 | 0.21 | 4.4 | 0.10 | 7.3 | 0.25 | 8.1 | 0.10 |
| 9 | 4.1 | 0.05 | 4.1 | 0.15 | 6.6 | 0.05 | 2.4 | 0.05 | 5.8 | 0.15 | 4.1 | 0.15 | 4.1 | 0.30 | 3.3 | 0.15 | 4.95 | 0.10 | 8.2 | 0.15 | 9.1 | 0.05 |
| aight Bank | 4.6 | 0.00 | 4.6 | 0.00 | 7.3 | 0.00 | 2.7 | 0.00 | 6.4 | 0.00 | 4.6 | 0.00 | 4.6 | 0.00 | 3.7 | 0.00 | 5.5 | 0.00 | 9.1 | 0.00 | 10.1 | 0.00 |
| eature Type | | .~ | | | | | | | | | | | _ | 200 | | | | | | | | |
| iffle, run, or pool | | fle | | in on left descr | | in | | un right descend | | un denth) This | | in | | ffle | ru | ın | n | un | ru | ın | ru | ın |

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.35 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.20 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: | gilisa gould | Date: | 10.04.07 | |
|---------|--------------|-------|----------|--|
| | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 9 |

| Date & Time: | 9.20.07 | 11:50 | | Site Location Description (e.g. road crossing): | | | | | | | |
|---|----------------------|-----------------------|---------------------------------------|---|------------------------------|---------------------|------------------|-----|--|--|--|
| Personnel: | D. Dods | son & G. Gould | | 205th St. | | | | | | | |
| Current Weat | her Cond | ditions: clear | | Facility Nar | cility Name: Blythedale WWTF | | | | | | |
| Weather cond | litions fo | r the past 10 days: r | no precip. | Permit Nun | nber: | MO 0123081 | | | | | |
| Drought conditions?: No drought ☑ ; Phase I □ ; Phase II □ ; Phase IV □ ; Unknown □ | | | | | | | | | | | |
| | | | | | | | | | | | |
| Site Location | | | | | | | | | | | |
| | | (Universal Transver | se Mercator Pi | rojection, In | Meters | | | | | | |
| Site 01 | Easting | ı (UTM X): | Northing (UTN | М Y): | | Horizontal Ac | Accuracy: Meters | | | | |
| | | 0418746 | | 4474530 | | | | 5.8 | | | |
| Site 11 | Easting | ı (UTM X): | Northing (UTN | M Y): | | Horizontal Ac | ccuracy: Meters | | | | |
| | | , | , , , , , , , , , , , , , , , , , , , | • | | | • | | | | |
| | 0418739 4474380 10.7 | | | | | | | | | | |
| Photos: | | | _ | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: Photo Pu | | Purpose | Photo ID#: Photo Pu | | se | | | |
| 72 | | downstream | 73 | upstream | | | | | | | |
| | | | | - | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpo | se | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Photo ID# | P | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | | |
| Swimming | | ☐ Skin diving | ☐ SCUBA di | iving | ☐ Tubin | a | ☐ Water Skiing | | | | |
| ☐ Wind surfing | | ☐ Kayaking | ☐ Boating | | □ Wadir | | ☐ Rafting | | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ✓ None of the above | | ☐ Other: | | | | |
| Describe: | | п парріпу | L Fishing | | E None | of the above | U Other. | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 9 |

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

| Surrounding Condition | ons: | | | | |
|--------------------------|------------------------|-----------------------|-------------------------|-----------|----------------------|
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservat | on lands 🔲 Urba | n areas | ☐ Rural Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | s □ Natur | e trails | ☐ Stairs/walkways |
| ☐ Boating accesses | ☑ Fence | ☐ No tresspass sign | gn □ Steep | Slopes | ☑ Other: |
| Comments: CRP? | | | | | |
| Evidence of Human l | | | | | |
| □ Roads | ☐ Foot path/prints | ☐ Dock/platform | | ing Sites | ☐ Rope swings |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Dischar | ge □ Fishin | ng Tackle | ☐ Livestock watering |
| comments/other: none | | | | | |
| Substrate: | | | | | |
| % Cobble | % Gravel | % Sand | % Silt | % Mud/C | Clay % Bedrock |
| 10 | | 90 | in solution | | |
| Aquatic Vegatation: | | | | | |
| banks only: horsetail, o | catalpa trees, other d | leciduous trees, prai | rie forbes | | |
| Water Characteristic | | | | | |
| Odor: | ☐ Sewage | □ Musky | ☐ Chemical | | lone ☐ Other: |
| Color: | ☐ Clear | □Green | ☐ Gray | | |
| | | | | | brown, silty |
| Bottom Deposit: | ☐ Sludge ☐ Oil | □ Solids | ☐ Fine sediments ☐ Foam | | lone |
| Surface Deposit: | 1 1 ()11 | ☐ Scum | II⊨∩am | I√IIN/ | one □ Other: |

WBID # 447 Site # 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support re |
|---|
|---|

| Channel Feature | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|---------------------------------|-----------------------------------|-----------------|-------------------|-----------------------|---------------|
| | access recallers (m) | | | | |
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| omments: (Please rec | ord any additional comments | here.) | | | |
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| ease verify that yo implete. | u have completed all s | ections, checke | ed all applicable | boxes, and that the t | form is |
| impiete. | | | | | |
| | | | D-440 | 0.00.07 | |
| urveyor's Signature: | gilisa gould | | _bate of Survey: | 9.20.07 | |
| | SES, Inc. | | | | |
| | | | | field team leader | |

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | ļ | | | Disso | lved Ox | ygen | | |
|-----------------------|------------------------|--------------------|-----------------|-----------|-----------------|-----------|-----------------|------------|-----------------|------------|-----------------------|-----------|-----------------|-----------|--------------|-----------|-----------------|------------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 447 | | | Site #: | 9 | | | | | | | | | Date: | 9.20.07 | , | | Time: | 11:50 | |
| | Estimate | ed Chann | el Incisi | on: | 0.5 | (m) (hei | ght betw | een low b | ank widt | h and wa | iter) | | | | | Di | ssolved | Oxygen: | | 7.9 | (mg/L) | |
| | 01 | UTM X | : | 0418746 | 5 | Ţ | UTM Y: | izontal Ac | 4474530 |) | | +/- | OM) 5.8 | (meters) | | Di | ssolved | Oxygen: | | | (% sat) | |
| | 11 | UTM X | : | 0418739 |) | . 1 | UTM Y: | | 4474380 |) | | +/- | 10.7 | (meters) | | | Specia | fic Cond: | | | (μS/cm) | |
| | | Stream ermne Le | | | | 7.5 | | (meters) | | | Survey S ge strean | | | 151 | (meters) | Wa | | perature: | | | | |
| | | | | | d Cilian | Could | | | (- | 011 41 014 | 50 001 001 | | | | | ,, | | .poruuaro. | | 20.0 | () | |
| | Fiel | d Staff: | Drew D | ouson an | d Gilisa | Goula | | | | - TD | | 0 | | | | | | | | | | |
| | Transect Cross-Section | | | | | | | | | | | | | | | | | | | | | |
| | 0 | 1 | 0 | 2 | 0 | 3 | (|)4 | 0 | 5 | 0 | 6 | (| 07 | 08 | } | | 09 | 1 | 0 | 11 | 1 |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.8 | 0.05 | 0.7 | 0.05 | 0.7 | 0.20 | 0.8 | 0.10 | 0.7 | 0.05 | 0.7 | 0.10 | 0.7 | 0.05 | 0.7 | 0.05 | 0.73 | 0.45 | 0.8 | 0.20 | 0.7 | 0.15 |
| 2 | 1.6 | 0.20 | 1.5 | 0.20 | 1.5 | 0.50 | 1.6 | 0.25 | 1.5 | 0.20 | 1.5 | 0.35 | 1.5 | 0.25 | 1.5 | 0.15 | 1.46 | 0.60 | 1.6 | 0.40 | 1.5 | 0.55 |
| 3 | 2.5 | 0.25 | 2.2 | 0.20 | 2.2 | 0.50 | 2.5 | 0.20 | 2.2 | 0.25 | 2.2 | 0.50 | 2.2 | 0.35 | 2.2 | 0.20 | 2.19 | 0.45 | 2.5 | 0.60 | 2.2 | 0.85 |
| 4 | 3.3 | 0.35 | 2.9 | 0.40 | 2.9 | 0.50 | 3.3 | 0.50 | 2.9 | 0.40 | 2.9 | 0.60 | 2.9 | 0.35 | 2.9 | 0.25 | 2.92 | 0.35 | 3.3 | 0.55 | 2.9 | 0.85 |
| 5 | 4.1 | 0.30 | 3.7 | 0.65 | 3.7 | 0.50 | 4.1 | 0.55 | 3.7 | 0.40 | 3.7 | 0.65 | 3.7 | 0.50 | 3.7 | 0.30 | 3.65 | 0.30 | 4.1 | 0.40 | 3.7 | 0.75 |
| 6 | 4.9 | 0.25 | 4.4 | 0.55 | 4.4 | 0.50 | 4.9 | 0.55 | 4.4 | 0.40 | 4.4 | 0.06 | 4.4 | 0.55 | 4.4 | 0.40 | 4.38 | 0.30 | 4.9 | 0.40 | 4.4 | 0.70 |
| 7 | 5.7 | 0.15 | 5.1 | 0.45 | 5.1 | 0.35 | 5.7 | 0.55 | 5.1 | 0.35 | 5.1 | 0.60 | 5.1 | 0.45 | 5.1 | 0.50 | 5.11 | 0.60 | 5.7 | 0.60 | 5.1 | 0.60 |
| 8 | 6.6 | 0.10 | 5.8 | 0.30 | 5.8 | 0.20 | 6.6 | 0.50 | 5.8 | 0.60 | 5.8 | 0.35 | 5.8 | 0.35 | 5.8 | 0.45 | 5.84 | 0.40 | 6.6 | 0.45 | 5.8 | 0.50 |
| 9 | 7.4 | 0.05 | 6.6 | 0.20 | 6.6 | 0.05 | 7.4 | 0.05 | 6.6 | 0.20 | 6.6 | 0.25 | 6.6 | 0.05 | 6.6 | 0.10 | 6.57 | 0.20 | 7.4 | 0.01 | 6.6 | 0.25 |
| Right Bank | 8.2 | 0.00 | 7.3 | 0.00 | 7.3 | 0.00 | 8.2 | 0.00 | 7.3 | 0.01 | 7.3 | 0.00 | 7.3 | 0.00 | 7.3 | 0.00 | 7.3 | 0.00 | 8.2 | 0.00 | 7.3 | 0.00 |
| Feature Type | rı | ın | n | ın | m | ın | 1*1 | un | ru | ın | ru | ın | 1** | un | rui | , | r | un | ru | ın | ru | n |
| (riffle, run, or pool | 11 | 111 | 11 | 111 | 1(| 111 | 1 | ш | 11 | †111 | 11 | 111 | 1 | un | Tul | 1 | I | uii | 1 U | 11 | Iu | 11 |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.85 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.35 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1)

All measurements to be taken to the nearest 0.01 meter.

| Signed: gilisa gould Date: 10.04.07 | |
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|-------------------------------------|--|

| WBID# | 447 |
|--------|-----|
| Site # | 10 |

Field Data Sheets For Recreatiuonal Use Stream Surveys

Data Sheet B-Site Characterization

| Date & Time: | 9.20.07 | 7 13:10 | | Site Location | on Descrip | tion (e.g. road | crossing): | | | | |
|---------------------|------------|-----------------------|----------------|---------------|------------------------------|-----------------|----------------|--|--|--|--|
| Personnel: | D. Dod: | son & G. Gould | | | Freedom | Road | | | | | |
| Current Weat | her Cond | ditions: clear | | Facility Nar | cility Name: Blythedale WWTF | | | | | | |
| Weather cond | litions fo | r the past 10 days: r | no precip. | Permit Nun | nber: | MO 0123081 | | | | | |
| Drought cond | itions?: N | No drought ☑ ; Pha | se I □ ; Phase | II □ ; Phas | e III □ ; PI | hase IV □ ; Ur | nknown 🗆 | | | | |
| | | | | | | | | | | | |
| Site Location: | | | | | | | | | | | |
| | | (Universal Transver | se Mercator Pi | rojection, In | Meters | | | | | | |
| Site 01 | Easting | (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | curacy: Mete | | | | |
| | | 0418107 | | 4471943 | | | 5.2 | | | | |
| Site 11 | Easting | ı (UTM X): | Northing (UTN | И Y): | | Horizontal Ac | curacy: Mete | | | | |
| | | 0418090 | | 4471843 | | | 7.8 | | | | |
| 0418090 4471843 7.8 | | | | | | | | | | | |
| Photos: | | | _ | _ | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose | | | | |
| 74 | | upstream | 75 | downstrear | n | | | | | | |
| | | | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | | |
| ☐ Swimming | 1 | ☐ Skin diving | ☐ SCUBA di | iving | ☐ Tubin | q | ☐ Water Skiing | | | | |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | □ Wadir | | ☐ Rafting | | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | | of the above | ☐ Other: | | | | |
| Describe: | | ш ттарріпід | L Tioning | | E None | or the above | D Other. | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 10 |

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

| Surrounding Condition | ons: | | | |
|---|--|--|---|------------------------------|
| ☐ City/County parks | ☐ playgrounds | ☑ MDC conservation land | s Urban areas | ☐ Rural Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | ☐ Nature trails | ☐ Stairs/walkways |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sign | ☐ Steep Slopes | ☑ Other: |
| Comments: CRP? | | | | |
| Evidence of Human l | | • | ! = · · · · · · | · - |
| ☐ Roads | ☐ Foot path/prints | ☐ Dock/platform | ☐ Camping Sites | ☐ Rope swings |
| ☐ RV/ATV Tracks | ☐ Fire pit/ring | ☐ NPDES Discharge | ☐ Fishing Tackle | ☐ Livestock watering |
| comments/other: | | | | |
| | | | | |
| | | | | |
| Substrate: % Cobble 30 | % Gravel | % Sand % Silt | % Mud/0 | Clay % Bedrock |
| % Cobble 30 Aquatic Vegatation: | | | % Mud/ | Clay % Bedrock |
| % Cobble 30 Aquatic Vegatation: vegetated along banks Water Characteristics | s; sparse individual d | 70 luckweed (1-5%) in water | | |
| % Cobble 30 Aquatic Vegatation: vegetated along banks Water Characteristics Odor: | s; sparse individual d s: □ Sewage | 70 luckweed (1-5%) in water ☐ Musky ☐ Che | mical ☑ f | None □ Other: |
| % Cobble 30 Aquatic Vegatation: vegetated along banks Water Characteristics | s; sparse individual d | 70 luckweed (1-5%) in water | mical ☑ I | None □ Other: Milky ☑ Other: |
| % Cobble 30 Aquatic Vegatation: vegetated along banks Water Characteristics Odor: | s; sparse individual d s: □ Sewage | 70 luckweed (1-5%) in water I Musky I Che I Green I Gra | mical ☑ I y □ I greenish-brown an | None □ Other: Milky ☑ Other: |

WBID # 447 Site # 10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

| Channel Feature | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|----------------------------------|-----------------------------------|-----------------|-------------------|-----------------------|---------------|
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| lease verify that yo omplete. | ou have completed all s | ections, checke | ed all applicable | boxes, and that the f | orm is |
| urveyor's Signature: | gilisa gould | | _Date of Survey: | 9.20.07 | |
| Organization: | SES, Inc. | | | | |

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | | | | Disso | lved Ox | xygen | | |
|-----------------------|------------------------|------------------------------|--|------------------------------|-----------------|-----------|-----------------|-----------|---------------------------------|-----------|-----------------|------------------------|-------------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | Waterbo | ody ID: | 447 | | • | Site #: | 10 | | | | | | | | | Date: | 19.20.0 | 7 | | Time: | 13:10 | |
| | | | | | | | | een low b | | | | | | | | D | issolved | Oxygen: | | 7.8 | (mg/L) | |
| | 01 | cation - l UTM X UTM X | <u>: </u> | UTM X) 0418107 0418090 | 7 | . 1 | UTM Y: | | ecuracy E 4471943 4471843 | 3 | • | DOP / FO +/- +/- | OM) 5.2 7.8 | (meters) | | D | issolved | Oxygen: | | | (% sat) | |
| | | e Stream | | | | • | | (meters) | | ength of | 1 | | | | (meters) | | Specif | fic Cond: | | | (µS/cm) | |
| | | ermne Le | | | | 0.7 | | (meters) | U. | 0x avera | - | _ | | 171.1 | (meters) | Wa | iter Tem | perature: | | 22.3 | (°C) | |
| | Fie | ld Staff: | Drew D | odson an | d Gilisa | Gould | | | | | | | | | | | | | | | | |
| | Transect Cross-Section | | | | | | | | | | | | | | | | | | | | | |
| | 01 02 03 | | | (| 04 05 | | | | 06 07 | | | 0 | 8 | 09 | | 10 | | 11 | | | | |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.6 | 0.10 | 0.7 | 0.15 | 0.7 | 0.25 | 0.8 | 0.15 | 1.0 | 0.15 | 0.9 | 0.20 | 1.0 | 1.00 | 0.8 | 1.00 | 1.19 | 0.20 | 0.9 | 0.20 | 0.9 | 0.25 |
| 2 | 1.1 | 0.70 | 1.5 | 0.55 | 1.5 | 0.50 | 1.6 | 0.45 | 2.0 | 0.55 | 1.8 | 0.40 | 2.0 | 1.00 | 1.6 | 1.00 | 2.38 | 0.50 | 1.8 | 0.25 | 1.8 | 0.40 |
| 3 | 1.7 | 0.85 | 2.2 | 0.65 | 2.2 | 0.55 | 2.5 | 0.60 | 3.0 | 0.65 | 2.7 | 0.70 | 3.0 | 1.00 | 2.5 | 0.45 | 3.57 | 0.70 | 2.7 | 0.30 | 2.7 | 0.30 |
| 4 | 2.2 | 0.60 | 2.9 | 0.60 | 2.9 | 0.45 | 3.3 | 0.55 | 4.0 | 0.65 | 3.6 | 0.60 | 4.0 | 1.00 | 3.3 | 0.00 | 4.76 | 0.30 | 3.6 | 0.25 | 3.6 | 0.25 |
| 5 | 2.8 | 0.45 | 3.7 | 0.45 | 3.7 | 0.45 | 4.1 | 0.50 | 5.1 | 0.70 | 4.6 | 0.60 | 5.1 | 1.00 | 4.1 | 0.40 | 5.95 | 0.25 | 4.6 | 0.30 | 4.6 | 0.25 |
| 6 | 3.3 | 0.30 | 4.4 | 0.40 | 4.4 | 0.50 | 4.9 | 0.60 | 6.1 | 0.75 | 5.5 | 0.60 | 6.1 | 1.00 | 4.9 | 0.60 | 7.14 | 0.30 | 5.5 | 0.30 | 5.5 | 0.20 |
| 7 | 3.9 | 0.25 | 5.1 | 0.35 | 5.1 | 0.45 | 5.7 | 0.45 | 7.1 | 0.65 | 6.4 | 0.60 | 7.1 | 1.00 | 5.7 | 0.80 | 8.33 | 0.70 | 6.4 | 0.55 | 6.4 | 0.50 |
| 8 | 4.4 | | | 0.35 | | 0.35 | 6.6 | 0.30 | 8.1 | 0.30 | 7.3 | 0.60 | 8.1 | 1.00 | 6.6 | | 9.52 | 0.40 | 7.3 | 0.60 | 7.3 | 0.60 |
| 9 | 5.0 | 0.05 | 6.6 | 0.10 | 6.6 | 0.10 | 7.4 | 0.25 | 9.1 | 0.15 | 8.2 | 0.25 | 9.1 | 1.00 | 7.4 | 0.60 | 10.71 | 0.30 | 8.2 | 0.10 | 8.2 | 0.30 |
| Right Bank | 5.5 | 0.00 | 7.3 | 0.00 | 7.3 | 0.00 | 8.2 | 0.00 | 10.1 | 0.00 | 9.1 | 0.00 | 10.1 | 0.00 | 8.2 | 0.00 | 11.9 | 0.00 | 9.1 | 0.00 | 9.1 | 0.00 |
| Feature Type | | • | | | | | | | | | | - | | | | | | • | | | | |
| (riffle, run, or pool | ро | ool | rı | in | | in | | un | | in | | ın | r | un | ru | n | r | un | ru | ın | ru | n |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted wid

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

0.45 MEDIAN

| Signed: gilisa gould Date: 10.04.07 | gilisa gould Date: 10.04.07 |
|-------------------------------------|-----------------------------|
|-------------------------------------|-----------------------------|

1.00 MAXIMUM

Field Data Sheets For Recreatiuonal Use Stream Surveys

Data Sheet B-Site Characterization

| Date & Time: | 7 14:20 |) | Site Location Description (e.g. road crossing): | | | | | | | |
|---------------|---|---------------------|---|---------------|----------------------------|-------------------------------|------------------------|--|--|--|
| Personnel: | D. Dod | son & G. Gould | | Highway A | | | | | | |
| Current Weat | Current Weather Conditions: clear | | | | | acility Name: Blythedale WWTF | | | | |
| Weather conc | Weather conditions for the past 10 days: no precip. | | | | | MO0123081 | | | | |
| Drought cond | itions?: I | No drought ☑ ; Pha | se I □ ; Phase | · II □ ; Phas | e <mark>III □ ; P</mark> l | nase IV □ ; Ur | nknown 🗆 | | | |
| | | | | | | | | | | |
| Site Location | 1: | | | | | | | | | |
| | | (Universal Transver | rse Mercator P | rojection, In | Meters | | | | | |
| Site 01 | Easting | g (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | ccuracy: Meters | | | |
| | | 0417406 | | 4470058 | | | 6.4 | | | |
| Site 11 | Easting | g (UTM X): | Northing (UTI | M Y): | | Horizontal Ac | ccuracy: Meters | | | |
| | | | | | | | | | | |
| | <u>.I</u> | | <u>. I</u> | | | | | | | |
| Photos: | Т | | | T | | 1 | Т | | | |
| Photo ID# | F | Photo Purpose | Photo ID#: | Photo F | Purpose | Photo ID#: | Photo Purpose | | | |
| 76 | | upstream | 77 | downsteam | 1 | 78 | showing height of bank | | | |
| | | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Photo ID# | F | Photo Purpose | Photo ID# | Photo F | Purpose | Photo ID# | Photo Purpose | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Uses Observ | ed: | | | | | | | | | |
| ☐ Swimming | 3 | ☐ Skin diving | □ SCUBA d | iving | ☐ Tubing | g | ☐ Water Skiing | | | |
| ☐ Wind surfi | ng | ☐ Kayaking | ☐ Boating | | □ Wadir | ng | ☐ Rafting | | | |
| ☐ Hunting | | ☐ Trapping | ☐ Fishing | | ☑ None | of the above | ☐ Other: | | | |
| Describe: | | | <u>. </u> | | • | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| WBID# | 447 |
|--------|-----|
| Site # | 11 |

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

| Surrounding Condition | | | | | | |
|----------------------------|-----------------------|--------------------|----------|----------------|--------------|----------------|
| ☐ City/County parks | ☐ playgrounds | ☐ MDC conservati | | ☐ Urban area | | l Residential |
| ☐ Campgrounds | ☐ State parks | □ National Forests | | ☐ Nature trail | | s/walkways |
| ☐ Boating accesses | ☐ Fence | ☐ No tresspass sig | gn | ☑Steep Slope | es 🗆 Othe | er: |
| Comments: | | | | - | | |
| none | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Evidence of Human I | Haar | | | | | |
| □ Roads | ☐ Foot path/prints | ☐ Dock/platform | | ☐ Camping S | 'itos □ Rone | e swings |
| ☐ R0ads ☐ RV/ATV Tracks | ☐ Foot path/prints | ☐ NPDES Discharg | 70 | ☐ Camping S | | stock watering |
| comments/other: | LI FILE PINTING | LI INF DEO DISCHAR | ie I | LI FISHING TO | TKIE I LIVO | SLUCK Watering |
| none | | | | | | |
| Hone | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Substrate: | | | | | | |
| % Cobble | | % Sand | % Silt | % N | /Jud/Clay | % Bedrock |
| 20 | 30 | 50 | _ | | | |
| | · | | | | | |
| Aquatic Vegatation: | | | | | | |
| 100/ | ′ | 4 . | | | | |
| banks vegetated, 10% | , algae bloom @ / tra | ansects | | | | |
| | | | | | | |
| | | | | | | |
| Water Characteristic | ••• | | | | | |
| Odor: | □ Sewage | ☐ Musky | ☐ Chem | ical | ☑ None | ☐ Other: |
| Color: | ☐ Clear | □Green | ☐ Gray | ICai | ☐ Milky | ☐ Other: |
| Color. | Li Citai | ПОІССІІ | □ Cray | | □ IVIIIIXy | brown |
| Bottom Deposit: | □ Sludge | □ Solids | □ Fine s | ediments | ✓ None | ☐ Other: |
| Surface Deposit: | □ Oil | ☑ Scum | ☐ Foam | | □None | ☐ Other: |
| Odridoo Dopooit. | | | | | | |

WBID # 447 Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

| | Additional Stream Mor | rphology: (Record isolated | pools or other features identified during | the survey that may support recreational uses |
|--|-----------------------|----------------------------|---|---|
|--|-----------------------|----------------------------|---|---|

| | Distance from access location (m) | Width (m) | Length (m) | Median Depth (m) | Max Depth (m) |
|----------------------------------|---|-----------------|------------------|---------------------|---------------|
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| | | | | | |
| omments: (Please re | cord any additional comments | here.) | | | |
| | none | | | | |
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| | | | | | |
| lease verify that yo omplete. | ou have completed all s | ections, checke | d all applicable | boxes, and that the | form is |
| omplete. | ou have completed all s gilisa gould | | | | form is |

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

| | | | | | | | | | | | | | | | | | | Disso | Ived Ox | tygen | | |
|----------------------|-----------------|----------------------|-----------------|-----------|-----------------|-----------|-----------------|------------|-----------------|-----------------------|-----------------|------------------------|-----------------|-----------|--------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | | | • | | _ | | | | | | | | | | | Date: | 9.20.07 | , | | Time: | 14:20 | |
| | | | | | | | _ | een low b | | | | | | | | Di | issolved | Oxygen: | | 9.4 | (mg/L) | |
| | | | • | | | - | UTM Y: | izontal Ac | 447005 | 8 | • | DOP / FO +/- +/- | OM) 6.4 | (meters) | , | Di | issolved | Oxygen: | | | (% sat) | |
| | | | | | | | | | | | | | | (meters) | | | Speci | fic Cond: | | | (µS/cm) | |
| | | e Stream ermne Le | | | | 9.1 | | (meters) | • | ength of 20x avera | | | | 181.1 | (meters) | Wa | ter Tem | perature: | | 25 | (°C) | |
| | Fiel | d Staff: | Drew D | odson an | nd Gilisa | Gould | | | | | | | | | | | | | | | | |
| | | | | | | | | | | Tra | nsect C | ross-Se | ction | | | | | | | | | |
| | 01 02 | | 02 03 | | 3 | (| 04 | (|)5 | 0 | 6 | (| 07 | 08 | 3 | | 09 | 1 | 0 | 11 | | |
| Station | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) | Distance (m) | Depth (m) |
| Left Bank | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.8 | 0.01 | 0.6 | 0.05 | 0.8 | 0.05 | 0.7 | 0.05 | 0.6 | 0.35 | 1.2 | 0.05 | 1.2 | 0.05 | 1.0 | 0.05 | 0.91 | 0.10 | 0.9 | 0.05 | 1.2 | 0.05 |
| 2 | 1.6 | 0.05 | 1.1 | 0.10 | 1.6 | 0.15 | 1.5 | 0.20 | 1.3 | 0.30 | 2.4 | 0.20 | 2.4 | 0.01 | 2.0 | 0.20 | 1.82 | 0.30 | 1.8 | 0.20 | 2.4 | 0.15 |
| 3 | 2.5 | 0.20 | 1.7 | 0.15 | 2.5 | 0.20 | 2.2 | 0.40 | 1.9 | 0.40 | 3.6 | 0.25 | 3.6 | 0.00 | 3.0 | 0.30 | 2.73 | 0.30 | 2.7 | 0.25 | 3.6 | 0.20 |
| 4 | 3.3 | 0.25 | 2.2 | 0.15 | 3.3 | 0.30 | 2.9 | 0.30 | 2.6 | 0.45 | 4.8 | 0.25 | 4.8 | 0.00 | 4.0 | 0.00 | 3.64 | 0.25 | 3.6 | 0.35 | 4.8 | 0.20 |
| 5 | 4.1 | 0.35 | 2.8 | 0.15 | 4.1 | 0.35 | 3.7 | 0.20 | 3.2 | 0.50 | 6.0 | 0.30 | 6.0 | 0.00 | 5.1 | 0.30 | 4.55 | 0.25 | 4.6 | 0.50 | 6.0 | 0.30 |
| 6 | 4.9 | 0.40 | 3.3 | 0.15 | 4.9 | 0.30 | 4.4 | 0.20 | 3.8 | 0.40 | 7.1 | 0.40 | 7.1 | 0.05 | 6.1 | 0.50 | 5.46 | 0.20 | 5.5 | 0.60 | 7.1 | 0.40 |
| 7 | 5.7 | 0.15 | 3.9 | 0.10 | 5.7 | 0.20 | 5.1 | 0.25 | 4.5 | 0.25 | 8.3 | 0.40 | 8.3 | 0.45 | 7.1 | 0.55 | 6.37 | 0.25 | 6.4 | 0.60 | 8.3 | 0.35 |
| 8 | 6.6 | 0.15 | 4.4 | 0.05 | 6.6 | 0.15 | 5.8 | 0.05 | 5.1 | 0.10 | 9.5 | 0.30 | 9.5 | 0.55 | 8.1 | 0.40 | 7.28 | 0.40 | 7.3 | 0.50 | 9.5 | 0.35 |
| 9 | 7.4 | 0.15 | 5.0 | 0.01 | 7.4 | 0.05 | 6.6 | 0.05 | 5.8 | 0.01 | 10.7 | 0.05 | 10.7 | 0.25 | 9.1 | 0.20 | 8.19 | 0.20 | 8.2 | 0.10 | 10.7 | 0.15 |
| Right Bank | 8.2 | 0.00 | 5.5 | 0.00 | 8.2 | 0.00 | 7.3 | 0.00 | 6.4 | 0.00 | 11.9 | 0.00 | 11.9 | 0.00 | 10.1 | 0.00 | 9.1 | 0.00 | 9.1 | 0.00 | 11.9 | 0.00 |
| Feature Type | | | | | | | | | | 1 | | 1 | | | | _ | | | | -1 | | - 1 |
| riffle, run, or pool | n n | ın | rı | ın | rı | ın | r | un | po | ool | pc | ool | r | un | ru | n | 1 | un | po | ool | po | 01 |

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.60 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

0.20 MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as ≥ 1) All measurements to be taken to the nearest 0.01 meter.

| Signed: | gilisa gould | Date: | 10.04.07 | |
|---------|--------------|-------|----------|--|
| | | | | |



Site# 1 Photo ID# 53, Downstream



Site# 2 Photo ID# 55, Upstream



Site# 1 Photo ID# 54, Upstream



Site# 2 Photo ID# 56, Downstream



Site# 3 Photo ID# 57, Upstream



Site# 4 Photo ID# 59, Log jam



Site# 3 Photo ID# 58, Downstream



Site# 4 Photo ID# 60, Downstream



Site# 4 Photo ID# 61, Upstream



Site# 5 Photo ID# 63, Upstream



Site# 5 Photo ID# 62, Downstream



Site# 5 Photo ID# 64, Livestock



Site# 6 Photo ID# 65, Upstream



Site# 6 Photo ID# 67, Livestock watering



Site# 6 Photo ID# 66, Downstream



Site# 7 Photo ID# 68, Downstream



Site# 7 Photo ID# 69, Upstream



Site# 8 Photo ID# 71, Upstream



Site# 8 Photo ID# 70, Downstream



Site# 9 Photo ID# 72, Downstream



Site# 9 Photo ID# 73, Upstream



Site# 10 Photo ID# 75, Downstream



Site# 10 Photo ID# 74, Upstream



Site# 11 Photo ID# 76, Upstream



Site# 11 Photo ID# 77, Downstream

No photo

Site# 11 Photo ID# 78, showing height of bank